

ESG and sustainable management in professional football: a bibliometric approach

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Abstract

Football sustainability management practices have been a strategic imperative nowadays. In literature and practice, sustainability management has also been a central topic. This study, therefore, presents a bibliometric review of sustainability management in football business management across environmental, social, and economic dimensions. Using a structured search of the Scopus database (2005–2025), 1,451 records were identified, resulting in a final sample of 254 peer-reviewed, football-specific articles after screening. The findings reveal a clear imbalance in the literature: economic sustainability dominates (41.7%), followed by social sustainability (39.4%), while environmental sustainability remains underrepresented (15.0%). Economic research primarily examines financial governance mechanisms, including Financial Fair Play and revenue diversification. Social studies focus on community engagement, volunteerism, CSR initiatives, and mega-event legacies. Environmental scholarship addresses stadium energy efficiency, carbon emissions from travel, and waste management, yet remains limited relative to football's significant ecological footprint. The review highlights critical gaps, including limited longitudinal analyses, insufficient club-level financial case studies, and underdeveloped research on environmental innovation and fan-driven sustainability practices. It calls for more integrated, interdisciplinary, and multi-level approaches to advance theoretical understanding and support practitioners in embedding sustainability more effectively across football's global ecosystem.

Keywords: football management, sustainability, ESG, corporate social responsibility, environmental governance

Introduction

In recent years, the integration of sustainability management practices within football business management has moved from peripheral concern to strategic imperative (Tettamanzi et al., 2024). An estimated 90 million people play football in Europe alone, highlighting the sport's vast societal reach and its potential to drive positive environmental and social outcomes (UEFA, 2025a). However, the environmental footprint of football is substantial: the sport is responsible for approximately 64–66 million tonnes of CO₂-equivalent (tCO₂e) emissions annually, comparable to the entire national emissions of Austria (Parkinson & Simms, 2025). Such figures underscore the urgent need for structured sustainability interventions across all levels of football's business ecosystem.

At the club level, teams have increasingly adopted Corporate Social Responsibility (CSR) and Environmental, Social, and Governance (ESG) frameworks to mitigate their impacts and bolster community engagement (Memari et al., 2024; Barbero-Inchaurbe, 2025). The English Football League's voluntary "Green Club" scheme, for example, has enrolled 38 out of its 72 member clubs (52.8%) since its 2021 launch, with ambitions to halve the league's carbon footprint within five years (Reuters, 2025). Furthermore, regulatory drivers such as the EU's Corporate Sustainability Reporting Directive will require around 150 professional clubs to publicly disclose sustainability data, signaling a shift toward greater transparency and accountability (Campelli, 2024)

At the level of events and competitions, major governing bodies have embedded ESG criteria directly into tournament planning and delivery. Since the 2022/23 season, UEFA applies a standardized ESG management system to all finals and final tournaments, benchmarking impacts across environmental, social, and governance dimensions (UEFA, 2023). In the 2025 club competition finals alone, UEFA plans to implement a record 315 sustainability activities across its four marquee events (UEFA, 2025b). Parallel analyses reveal that a single English Premier League match emits approximately 1.700 tCO₂e—with spectator travel accounting for half—while the FIFA World Cup generated some 6.5 million tCO₂e over its four-year cycle (Jennifer L., 2025). This initiative has also been reinforced at governance level, league and federation where ambitious targets are set for carbon reduction. FIFA's Climate Strategy, launched at COP26 in November 2021, commits to halving the organization's emissions by 2030 and achieving net-zero by 2040 in line with the UN Sports for Climate Action Framework (FIFA, 2023)

Moreover, the notion of sustainability in football extends beyond environmental stewardship to encompass social resilience, whereby football clubs leverage their platforms to foster community cohesion, inclusion, and well-being (Adam et al., 2025; Lozano & Barreiro-Gen, 2023). In the Polish Ekstraklasa, CSR programmes during the 2020/21 season engaged more than 45,000 local participants through educational workshops and youth academies, embedding clubs as vital community anchors (Wysoczański-Minkowicz, 2021). Ethnographic research on German community clubs demonstrates how democratic governance models and alternative sponsorship arrangements not only preserve club values but also enhance social capital: 82% of members reported a stronger sense of belonging and improved mental well-being after two years of participatory decision-making practice (Brandt & Kurscheidt, 2022). Additionally, the rollout of dedicated community trust initiatives across Europe has yielded a 23% reduction in self-reported mental distress among programme beneficiaries over twelve months, illustrating the tangible social dividends of football's grassroots engagement (Bullough et al., 2023). Football clubs have also been the source of pride, unity, and cohesion in various social settings, indicating its vital existence within the social community (Newson et al., 2023; García et al., 2025; Prasetya & Chow, 2025).

Crucially, women's participation in football has surged, with registered female players growing by 17% and women's teams by 30% between October 2021 and October 2022, and a global cohort of 16.6 million women and girls engaged in organised football in 2023, a 23% rise since 2019, underscoring the role of inclusive club-led outreach in promoting gender equity (Downward & Muniz, 2025; FIFA, 2024; Williams et al., 2023). Importantly, over 80% of young female participants report enhanced self-confidence and social skills through football engagement, highlighting the profound social impact of expanding opportunities for women and girls in the sport (Wrack, 2024).

Equally critical is economic sustainability in football club management, characterized by the capacity to generate diversified revenue streams, including match-day, broadcast, and commercial, that collectively account for over 68% of total income for leading European clubs, while maintaining a wage-to-turnover ratio below the 70% threshold mandated by UEFA's Financial Fair Play regulations to avoid sanctions (Atghia & Nazarian, 2023). Empirical measures such as the "S-Score" of Financial Sustainability reveal that clubs achieving a score above the median realize an average operating profit margin of 5.8% and sustain a debt-to-equity ratio under 1.2 across rolling five-year windows, underscoring the link between prudent fiscal governance and competitive stability (Evans, 2024). The COVID-19 pandemic further tested these frameworks: clubs

with robust digital monetization and cost-control mechanisms experienced only a 12% decline in turnover on average, compared to a 27% drop among less diversified peers, highlighting the value of financial agility in crisis contexts (Aygün et al., 2023). Recent developments have also underscored the danger of clubs running at debts and negative economic returns, emphasizing the importance of taking care economic means in being sustainable (Mirkovic et al., 2025).

Despite these advances, the literature remains fragmented, often focusing on isolated case studies rather than offering a comparative, multi-level synthesis. Literature review on football management sustainability also remains absent in the literature. This review therefore aims to map and critically assess the current state of sustainability management practices in football business management, within different perspectives spanning clubs, events, and leagues, and to identify key gaps that future research could address.

Literature Review

Sustainability in Sport: The Three Pillars

Sustainability in sport management has been conceptualized as the capacity of sport organizations to meet present needs without compromising the ability of future generations to meet theirs, integrating ecological balance with social equity and economic viability (Safarpour et al., 2025). Mallen & Chard (2011) bibliometric overview highlights how environmental sustainability in sport encompasses practices such as pollution prevention, resource efficiency, and habitat preservation, while social sustainability involves maintaining community well-being, equity, and quality of life through inclusive engagement and education. Moreover, Tangen (2021) underscores that true sustainability in sport requires not only reducing carbon footprints and waste but also embedding long-term financial stability and stakeholder trust into organizational strategies.

Within sustainability topics, the environmental pillar addresses climate impact, resource efficiency, and sustainable infrastructure within the football management scheme. Systematic reviews indicate that retrofitting sports venues with energy-efficient systems and renewable installations can reduce stadium energy consumption by up to 40% annually (Cayolla & Escadas, 2022). The social pillar focuses on community engagement, inclusion, and athlete welfare; stakeholder surveys of 5,917 sports-organization members during pandemic disruptions reveal that health and well-being initiatives are the foremost priority, highlighting sport's role in fostering social resilience and community cohesion (Cayolla et al., 2021).

Furthermore, recent empirical studies illustrate the intertwined nature of economic and governance sustainability within sustainability management, focusing on the business-side of sustainability (Bhat et al. 2024; David et al., 2024; Naciti et al., 2022). Within the football world, studies have analyzed 41 publicly listed sports firms on the Shanghai and Shenzhen Stock Exchanges from 2009 to 2023 which shows that robust ESG performance significantly enhances corporate value by strengthening intangible assets like brand equity and optimizing resource allocation (Bai et al., 2025). Complementary research finds that higher sustainable practices in governance, such as board oversight, transparency, and regulatory compliance, are critical for financial resilience and investor confidence (Lin, 2024). Moreover, integrating governance strategies (e.g., anti-corruption protocols and stakeholder engagement) within sustainability initiatives has been linked to more efficient resource allocation and risk management, further cementing long-term economic viability in the sport sector (Bayle, 2023; Cardoni et al., 2024).

Sustainability into Organizational Strategy

Beyond the dimensions of sustainability, the institutionalization of sustainability within sport organizations increasingly depends on strategic integration at the managerial level (L'Abate et al., 2026). Contemporary research emphasizes that sustainability initiatives yield meaningful outcomes only when embedded within core organizational decision-making rather than treated as peripheral CSR activities (Todaro et al., 2025). In football management, this integration involves aligning sustainability objectives with performance metrics, risk management systems, and long-term strategic planning which covers the three dimensions of economic, social, and governance, also better known as the “triple bottom line” of sustainability (Ferguson & Reid, 2025; Hernández-Hernández et al., 2024). Furthermore, sustainability-oriented leadership has been associated with stronger cross-functional coordination, improved transparency, and enhanced organizational adaptability in volatile sporting environments (Samuel et al., 2026). This strategic embedding of sustainability principles serves as a critical bridge between environmental and social responsibility and the broader economic and governance architecture of professional football organizations (Myung, 2024; Yu & Jeong, 2025).

Method

The literature for this review was identified through a systematic search of the Scopus database covering the period 2005 to 2025, extracted on 27th of May 2025. The initial search yielded 1,451 records. Only peer-reviewed articles were considered; conference proceedings, reviews, book chapters, and editorials were excluded at this stage to ensure consistency in study type and rigor. Records were then subjected to a two-stage screening process. First, any entry lacking an abstract, listing duplicate identifiers, or missing author information was removed, leaving 426 unique articles. In the second stage, titles and abstracts were assessed for topical relevance. Studies focused on player training, turf and grass maintenance, or other sports were excluded. Following this thematic screening, 289 articles remained for full-text analysis and synthesis. This approach ensures that the final corpus reflects rigorous, football-specific sustainability management practice studies.

The synthesis employed a concept-centric framework to organize findings around key concepts rather than individual studies (Tingelhoff et al., 2025; Paré et al., 2024). We began by coding all 254 articles for metadata (author, year, and country) and for content related to the study's three sustainability dimensions: environmental, social, and economic. Next, we extracted keywords from each abstract and generated a bi-gram word cloud to highlight the most intensively researched topics (Abdelwahab et al., 2025). This study also compiled statistics on the most influential topics within studies. This combined strategy revealed that 106 has studied economic sustainability, 100 articles enriched literature on social sustainability, and 38 focused on environmental sustainability. From these articles, the top 25% cited studies and the last 3 years articles were read one-by-one to ensure the understanding on the state-of-the-art in the football management sustainability practices.

Result

The 254 football-specific sustainability articles identified here represent a relatively modest body of work when viewed against the broader sustainability literature, suggesting football-specific sustainability management studies are still relatively underlooked (Pallathadka et al., 2023; Santos et al., 2022). Within this football corpus, economic sustainability is the most thoroughly investigated dimension, comprising 106 articles (41.7%) and reflecting enduring attention to financial governance, revenue diversification, and resilience. Social sustainability follows closely with 100 articles (39.4%), demonstrating strong engagement with community well-being, inclusion, and

stakeholder relations. In contrast, environmental sustainability is markedly under-represented at 38 articles (15.0%), highlighting a critical gap in research on carbon emissions, resource efficiency, and ecological stewardship in football contexts (Khanna et al., 2024). This imbalance suggests an urgent need for future work to bring environmental issues into greater parity with economic and social concerns in sustainability issues within football management. For specific studies examining each of three pillars within sustainability are examined below.

A Review of Economic Sustainability in Football

Economic governance in football has been shaped by regulatory interventions aimed at curbing excessive spending and promoting financial stability. Szymanski (2014) argues that FFP prioritizes financial efficiency over competitive fairness, effectively replacing one form of inequality with another. Agency-theoretic analyses highlight persistent principal–agent tensions: Schubert (2014) demonstrates how asymmetric information between UEFA and member clubs fosters opportunistic behaviors that can undermine regulatory objectives. Empirical evaluations reveal mixed efficacy; for instance, Evans et al. (2019) find that the English Football League’s Salary Cost Management Protocol improved club liquidity only in its inaugural year, with negligible effects on long-term solvency or profitability. Moreover, Plumley et al. (2017) show that while the Premier League’s “Big Six” maintained favourable *Z*-scores post-FFP, Championship clubs continued to exhibit signs of financial distress, underscoring uneven regulatory impact across league tiers.

Much of the economic literature has concentrated on how league administrators use financial rules to enhance competitive balance and maintain league integrity (Mondal et al., 2023; Ramchandani et al., 2023). However, club-level economic management remains under-examined. Only a handful of studies delve into club-specific revenue strategies. FFP has also been one of the most favorite topics chosen by literature, showcased by its extensive existence within the football realm and bi-gram (Ramchandani et al., 2023; Schubert, 2014; Szymanski, 2014). Similarly, despite the enormous scale and profile of football mega-events, economic analyses of their financial legacies are surprisingly sparse. Müller et al. (2022) cross-event comparison uncovers persistent deficits across World Cups and Olympics reflecting mean cost-to-revenue ratios of 162%, but offers little football-specific follow-up on host-city economic impacts. Only one study finds that, using geographically weighted regression between night-light data and city-level income, South African 2010 FIFA World Cup host cities did not experience higher income growth than

non-host cities, and those with greater stadium investments recorded approximately 9% lower income growth, indicating limited economic impact and potential investment inefficiency (Coulibaly et al., 2022). These gaps underscore the need for future research to broaden the economic lens: deeper case studies of club-level financial governance and sponsorship models, and comprehensive evaluations of football-event economic outcomes, would significantly enrich our understanding of economic sustainability in the football sector.



Figure 1 Bi-Gram of Reviewed Articles in Economic Sustainability

A Review of Social Sustainability in Football

Across the social-sustainability literature, several themes recur prominently among the most cited studies. Mega-event host community impacts dominate early research. For example, Ohmann et al. (2006) provide extensive empirical evidence on Munich residents' perceptions of urban regeneration, enhanced security, and the celebratory atmosphere during the 2006 World Cup. Volunteer engagement and organizational capacity also feature heavily: Swierzy et al. (2018) use multi-level analyses of German clubs to show that human, financial, and structural capacities predict both adult and parental volunteer commitment, while Neufeind et al. (2013) identify job-design factors at Euro 2008 that either sustain or undermine episodic volunteers' future involvement. At the club level, CSR development is well-established in Kolyperas et al. (2015) where six developmental phases were discerned, from volunteering to full strategic integration

Collectively, this body of work reveals that while major events and league initiatives can deliver significant community benefits, they also carry risks of exclusion and uneven impacts. Studies of host-city perceptions generally report positive attitudes toward regeneration, security, and atmosphere (Romano et al., 2023; Ohmann et al., 2006). However, other risks which entail negative consequences such as displacement, crime concerns, and top-down "event seizure" can undermine social cohesion (Müller, 2017).

Qatar's National Vision 2030 case similarly illustrates how large-scale infrastructure investments can generate both cultural uplift and social challenges for host populations (Griffin et al., 2025).

At the grassroots and club level, football's social impact emerges through volunteerism, CSR schemes, and community-led programs. Organizational capacity, which encompasses human, financial, and structural resources, strongly predicts volunteer engagement, highlighting the importance of deliberate job design and recognition practices for both episodic and long-term volunteers (Neufeind et al., 2013; Swierzy et al., 2018). CSR in clubs is driven by both social-mission and commercial objectives, evolving through identifiable developmental phases (Kolyperas et al., 2015). Sport-for-development initiatives demonstrate tangible gains in social capital and self-identity among marginalized participants, while fan-community research highlights how shared travel experiences and place-based identities reinforce social bonds (Millington et al., 2022).



Figure 2 Bi-Gram of Reviewed Articles in Social Sustainability

This review also identifies several under-examined areas. First, the long-term social legacies of mega-events remain poorly understood, as most studies provide only single pre- or post-event snapshots rather than tracking longitudinal trajectories. Second, the mental health and well-being impacts on volunteers and community participants, especially in post-conflict or disadvantaged settings, warrant deeper mixed-methods inquiry. Third, research on football's social sustainability in relation to disability is scarce and should be expanded. Fourth, the notion of football as a monumental city symbol and epitome has also been largely underresearched (Lapsley, 2024). Finally, studies of small-scale, non- and semi-professional leagues and grassroots events could deepen our understanding of football's everyday social sustainability beyond the high-profile glare of

mega-stadia and global tournaments. Addressing these gaps will significantly enrich both theory and practice in football's social sustainability research.

A Review of Environment Sustainability in Football Management

Our synthesis of environmental sustainability research in football identifies four well-established thematic streams alongside several fertile but under-investigated avenues. First, the environmental performance of stadium infrastructure and discourse has been scrutinized through both critical and technical lenses. Wågan (2025) employs critical discourse analysis to contrast FIFA and UEFA's market-friendly "growth-compatible" narrative with We Play Green's more radical calls for political and consumer reform. Life-cycle assessments build on this by quantifying material impacts: Falsafi et al. (2025) demonstrate that local recycling of artificial turf with crumb rubber reuse yields a net negative GWP of -6 tCO₂-eq per field, compared to 25 tCO₂-eq for incineration-based energy recovery. Complementarily, Wu (2023) TRNSYS simulations illustrate that a net-zero-energy sports complex, powered by rooftop photovoltaics, compressed-air storage, and geothermal wells, can satisfy up to 86 percent of its own energy demand.



Figure 3 Bi-Gram of Reviewed Articles in Environment Sustainability

Second, the carbon footprint of football-related travel has received sustained attention. Domański (2024) reports that substituting low-carbon travel modes for traditional coach transport can reduce away-match GHG emissions by 13–34 percent, and that a "Sports Centre" scheduling model could cut travel distances by nearly half. McCarthy et al. (2024) analyze team travel across 895 international matches (1990–2024), finding that despite advances in aircraft efficiency, CO₂ emissions have not declined, and have, in fact, increased under tournament expansion. Craig & Karabas (2024) forecast exacerbated thermal-stress risks for spectators at the 2026 World Cup,

underscoring the necessity of heat-mitigation strategies. Thormann & Wicker (2024) demonstrate that perceived environmental benefits more strongly drive fans' willingness to adopt bicycles and e-scooters than do perceived costs. Jiang & Jiang (2024) bibliometric mapping confirms that SDG alignment, carbon-footprint measurement, and applied sustainability in football tourism are among the field's most rapidly expanding focal point.

Third, circular-economy and waste-management innovations also stand as a robust research strand. Early ecological-footprint work by Collins et al. (2007) applies global land-use metrics to the FA Cup Final, illustrating how spectator consumption translates into profound environmental impacts, and Otto & Heath (2009) show that framing mega-event planning in terms of climate impacts can galvanize stakeholders toward greater environmental responsibility.

Fourth, a nascent but growing body of scholarship examines how supporter behavior underpins environmental outcomes. Winterich et al. (2019) find that emphasizing recyclables' transformation into new products increases tailgate recycling rates by over 20 percent, Scharfenkamp & Wicker (2024) document a pronounced gender gap in pro-environmental nutrition and vegan-food preferences among Bundesliga fans.

Despite this breadth, several promising frontiers remain scarcely explored. Gamified sustainability nudges including leveraging mobile apps to reward low-carbon travel or recycling behaviors with loyalty points, could harness fans' inherent brand loyalty to drive measurable environmental gains. Circular economy models for football merchandise, from upcycling retired jerseys to blockchain-enabled lifecycle tracking, present untapped opportunities for material-flow innovation. Moreover, social justice implications of stadium developments, such as gentrification pressures on surrounding neighborhoods and community resilience under climate-driven extreme weather, demand interdisciplinary inquiry at the nexus of environmental science, urban planning, and social equity (Tobar & Ramshaw, 2022). Pursuing these avenues will deepen and democratize our understanding of environmental sustainability in football, ensuring that both ecological goals and human well-being advance in tandem.

Conclusion

This review demonstrates that football-specific sustainability research remains a niche within the broader sustainability agenda: just 254 articles address environmental, social, and economic dimensions in the game, with a pronounced emphasis on economic governance (41.7%) and social impact (39.4%), and far less on environmental stewardship

(15.0%). While rigorous analyses of Financial Fair Play, volunteerism, and mega-event legacies have advanced our understanding of economic and social resilience, the relative paucity of studies on carbon footprints, circular-economy innovations, and ecological discourse reveals a critical gap. To redress this imbalance, future scholarship must broaden its conceptual and methodological horizons. Interdisciplinary, participatory, and longitudinal designs should interrogate environmental performance at stadium, league, and community scales; gamified nudges on environmental actions done by football fans; and equity-centered, co-creative approaches can ensure that green transitions mitigate social and spatial inequalities. By weaving together economic, social, and environmental threads into genuinely integrated frameworks, the next generation of research can both deepen theoretical insight and empower practitioners to steward football's global reach toward truly sustainable futures.

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