

A comprehensive review of emerging trends in sports management



Surinder Sethi^a  | Sumedh Talvelkar^a  

^aMahatma Gandhi Mission's Institute of Management and Research, MGM University, Chhatrapati Sambhajanagar, Maharashtra, India.

Abstract Sports management is a dynamic field that is always developing to meet the demands of a dynamic athletic environment. This review paper offers a comprehensive analysis of the new developments in sports management and their possible effects on the sector. This thorough overview provides helpful insights into the most recent trends that are changing how sports organizations function by examining recent research, case studies, and expert opinions. This article provides a comprehensive review of the cutting-edge trends influencing the future of sports management, including everything from technology developments to innovative corporate strategies and fan interaction techniques.

Keywords: athletes, sports management, corporate strategies

1. Introduction

1.1. Background information and the value of researching new trends in sports management

The context and importance of researching new trends in sports management stem from how quickly the sports sector is developing. Sports have evolved from being primarily recreational pursuits to multibillion dollar, multinational businesses with intricate operations. Keep up with the most recent advancements and trends to manage the opportunities and difficulties in this changing market. The context and importance of this study are as follows:

1. The sports landscape is always changing as a result of technological breakthroughs, altering fan tastes, and changing corporate structures. Sports managers and organizations can more easily adjust to these changes by studying new trends (Ciomaga 2013).

2. Competitive advantage: Sports organizations have an advantage when they are at the forefront of new trends. Early adopters of novel approaches and methods are in a better position to win over sponsors, investors, and supporters, giving them an advantage over rivals (Iancu et al 2016).

3. Enhanced Fan interaction: Sports managers can take advantage of fresh fan interaction tactics by being aware of rising trends. Sports organizations can forge closer ties with their fan base by utilizing technological developments, personalized experiences, and engaging fan engagements.

4. Financial Sustainability: To support the expansion and development of the sports business, sports management must be financially viable. Organizations can ensure reliable revenue streams and make wise financial decisions by implementing innovative business models and financial strategies (Bilohur 2019).

5. Athlete Welfare and Performance: New trends in sports management frequently emphasize improving the welfare of athletes as well as their performance. Sports science breakthroughs, wearable technologies, and data analytics can all help athletes perform better and avoid injuries (Meena et al. 2023).

6. Impact on Sports Governance: Governance structures may need to change when sports organizations adopt new technologies and business strategies. The regulatory and moral issues that must be taken into account to preserve fair play and sports integrity can be clarified by studying new trends, as mentioned by Mahony and Howard (2001).

7. Industry Resilience: Similar to any other sector, the sports industry must adapt to unforeseen threats such as pandemics, climate change, and socioeconomic upheavals. Finding possible hazards and opportunities to increase resilience and sustainability is made easier by studying emerging trends (Seshadri et al. 2023).

8. Academic and professional advancement: Investigating new trends in sports management advances academic understanding and improves the skills of those working in the field. It supports lifelong learning and well-informed choices (Aljassar et al 2023).

1.2. The review's goals and scope

The review on "Emerging Trends in Sports Management" has the following goals and focuses:



1.3. Objectives

1. **Determine Current Trends:** The objective of this review is to determine and evaluate the most recent and important trends in sports management. This study aimed to investigate technological developments, adjustments to fan interaction tactics, new business model developments, and emerging practices related to athlete welfare.

2. **Giving Comprehensive Insights:** This review aims to provide a thorough and well-rounded summary of the trends that have been found. The fundamental causes of these developments will be explored, and how they might affect the sports industry will be examined.

3. **Explore Implications:** This review aims to investigate how these new developments may affect various facets of sports management. This entails being aware of how these changes impact the operations of sports organizations as well as spectator experience, athlete welfare, and financial viability.

4. **Highlight Innovative Practices:** This review aims to draw attention to cutting-edge methods that have successfully transformed sports management. Case studies and illustrations of businesses that have benefited from these developments will be featured.

5. **Offer advice:** This review offers helpful advice for sports management, organizations, and stakeholders based on research on developing trends. They will follow these suggestions as a guide as they adopt and modify their practices to fit the evolving sports management environment.

1.4. Scope

1. **Technological advancements:** This assessment examines how technological innovations such as data analytics, artificial intelligence, virtual and augmented reality, and blockchain technology influence sports management (Keiper et al 2023).

2. **New Business Models and Financial Strategies:** The evaluation will look at new business models, including the influence of esports, direct-to-consumer and subscription models, private equity investment, and long-term financial planning.

3. **Fan interaction and social media:** This review examines cutting-edge methods of fan interaction, social media tactics, personalization, gamification, and influencer marketing (López-Carril et al 2020).

4. **Diversity and Inclusion:** This review reviews current trends in encouraging diversity and inclusion in the sports management industry, including leadership representation, inclusive marketing, and dealing with discrimination (Gardner et al 2023).

5. **Environmental Sustainability:** The evaluation will look at green programs, environmentally friendly gear, carbon neutrality projects, and the contribution of sports to environmental awareness (Cury et al. 2023a).

6. **Innovative Event Management:** This article examines cutting-edge event management techniques, hybrid and virtual events, community interactions in the past and present, and the application of technology to improve fan experiences.

7. **Athlete Welfare and Well-Being:** This review includes developments in the areas of workload management, athlete mental health, and the influence of technology on athlete welfare (Drew et al. 2023).

8. **Ethical and Legal Considerations:** This review discusses issues relating to data privacy, sports betting laws, sports integrity, and legal difficulties brought about by developing sports industries (Hugaerts et al 2023).

2. Technological Advances in Sports Administration

2.1. The role of data analytics and artificial intelligence in decision-making

In the field of sports administration, data analytics and artificial intelligence (AI) have recently come to the forefront as gamechangers. They have transformed how decisions are made in numerous facets of the sports industry by providing useful information that was not previously available. Here, we examine how data analytics and AI play a crucial role in sports decision-making:

1. **Performance analysis:** To evaluate players' on-field performance, data analytics and artificial intelligence (AI) technologies are used. Coaches and analysts can discover trends and player and team flaws by gathering and analyzing enormous volumes of data from games and practice sessions. For greater overall performance, this information enables customized training plans, tactical modifications, and focused improvements.

2. **Injury Prevention and Management:** Sports organizations can keep tabs on athletes' health and identify potential injury hazards by using data analytics. To adopt preventative measures and customized rehabilitation regimens, coaches and medical professionals can use AI-powered algorithms to identify patterns that might suggest injury vulnerability.

3. **Data analytics are helpful in the processes of talent scouting and recruitment.** Finding players that fit particular team requirements and developing abilities is made easier by advanced statistical algorithms. This data-driven strategy reduces subjectivity and increases the chance of finding hidden gems.

4. **Fan Engagement:** Understanding fan preferences, actions, and attitudes requires the use of data analytics. Sports organizations may customize fan engagement methods and offer individualized experiences by using AI-powered sentiment analysis to measure fan reactions to team performance or marketing efforts.

5. Ticket pricing, seating layouts, and marketing tactics can all be optimized by sports groups by studying data on fan demographics, purchase trends, and historical attendance. This data-driven strategy guarantees optimum income generation while keeping fans happy.

6. Game strategy and in-game choices: During games, real-time data analytics and AI algorithms give coaches instantaneous information on the strategies of the opposition and the performance of individual players. Making wise decisions throughout a game, such as substitutions, tactical changes, and set-piece tactics, is easier because of this.

7. Data analytics assists sports companies in assessing the success of sponsorship agreements and marketing initiatives. Organizations can determine future relationships by monitoring the return on investment (ROI) of sponsorships and examining fan engagement indicators.

8. **Improved Fan Experience:** AI-driven technologies, including chatbots and virtual assistants, enhance the fan experience by offering interactive information, personalized recommendations, and quick answers to questions.

9. **Broadcast and media coverage:** By assessing viewer preferences, streamlining broadcast times, and adjusting material for particular audience segments, data analytics helps broadcasters and media outlets. This increases interest and viewership.

2.2. Effect of wearable technology on athlete health and performance

The way athletes practice, compete, and monitor their health has been revolutionized by wearable technology (Figure 1), which has emerged as a gamechanger in the world of sports. These cutting-edge gadgets, worn on the body or built into athletic gear, offer real-time data and insights that assist athletes in maximizing their performance and improving their general well-being (Romagnoli et al 2023).

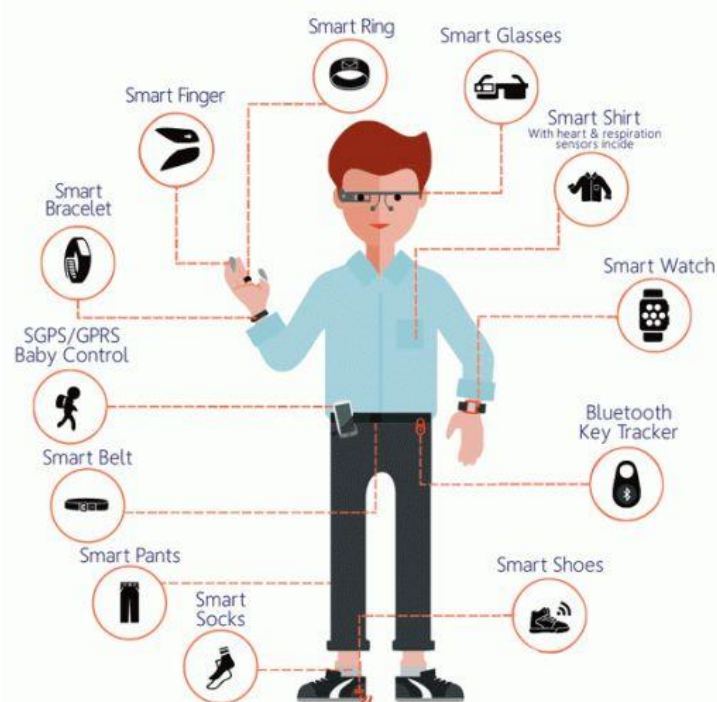


Figure 1 Wearable Technologies for Athlete Performance.

The effects of wearable technology on athletic performance and health are examined here:

1. **Performance Monitoring:** Wearable technology, including fitness trackers and smartwatches, gathers information on a range of performance parameters, such as heart rate, speed, distance traveled, and acceleration. These data can be analyzed by athletes to pinpoint areas in need of development, establish performance targets, and monitor advancement over time.

2. **Training Program Optimization:** Using wearable technology, athletes can modify their training plans in accordance with unique data. Athletes can create training plans that maximize performance and lower the risk of overtraining and injuries by monitoring effort, recuperation, and physiological reactions.

3. Injury Prevention: Wearable technology is essential for preventing injuries. Biomechanical sensors can be used by athletes to analyze their movement styles and identify any potential problems that could result in injury. To address these issues, coaches and medical personnel can take proactive measures.

4. Recovery management: Wearable technology gives athletes immediate input on their state of recovery, enabling them to better understand how training affects their bodies. Athletes can optimize their recovery tactics for a quicker recovery by keeping an eye on things such as their stress levels, hydration, and sleep quality.

5. Biomechanical analysis: Comprehensive biomechanical analysis is made possible by motion capture technologies and wearable sensors. With accurate input on their form, technique, and posture, athletes can enhance their movement efficiency and lower their risk of injury.

6. Wearable technology focuses on tracking an athlete's mental performance, including stress levels and cognitive function. Athletes can improve their focus, concentration, and overall mental health by evaluating mental health aspects.

7. Game analysis: Wearable technology helps coaches and analysts gather performance information during games in team sports. Teams can make wise in-game adjustments thanks to this data-driven approach's insights into player positioning, movement patterns, and tactical choices.

8. Sports Science Research: The massive amount of collected data from wearable technology helps in this field of study. The understanding of sports performance has advanced by the research on athlete physiology, performance patterns, and injury prevention techniques.

9. Remote Monitoring: Wearable technology makes it possible for coaches and medical personnel to watch athletes remotely, allowing them to do so even when they are not physically present (Giusti-Gestri 2023).

Table 1 compares various wearable technologies for tracking athlete performance.

Table 1 Wearable Technologies for Athlete Performance Monitoring.

Wearable Technology	Data Captured	Type of Sensors	Application Areas
GPS Trackers	GPS, Accelerometer	Location, Speed, Distance	Outdoor Sports (Running, Cycling, Soccer)
Heart Rate Monitors	Heart Rate	Heart Rate, HR Zones	Cardiovascular Fitness, Training Intensity
Accelerometers	Accelerometer	Acceleration, Impact Force	Impact and Load Analysis in Contact Sports (Football, Rugby)
Gyroscope Sensors	Gyroscope	Rotation, Angular Velocity	Balance and Movement Analysis in Gymnastics, Skating
Smart Clothing	Various Sensors	Biometric Data (HR, Temp) Real-Time Monitoring of Vital and Motion	Signs and Performance Metric
EMG Sensors	Electromyography	Muscle Activation Patterns	Muscle Performance and Rehabilitation

2.3. Using Blockchain Technology to Improve Sports Ticketing and Governance

A disruptive force in many industries, including sports, is blockchain technology. Blockchain has several benefits for sports governance and ticketing systems, from increased security and transparency to increased efficiency and fan involvement. Here, we examine how blockchain technology might improve sports administration and ticketing systems:

2.3.1. Sports Administration

1. Transparency and Accountability: The decentralized and unchangeable nature of blockchain technology guarantees that all transactions and decisions pertaining to governance are recorded transparently and cannot be changed. As a result, stakeholders, including players, clubs, fans, and sponsors, can confirm the legitimacy and integrity of governance processes, which promotes confidence among all parties involved.

2. Blockchain makes it possible to utilize smart contracts, which are self-executing contracts with predetermined rules. Smart contracts reduce administrative overhead and potential conflicts by automating a variety of governance processes, including player transfers, contract negotiations, and income sharing.

3. Sports corruption can be thwarted by the tamper resistance of blockchain technology. All financial transactions and decision-making procedures are recorded on the blockchain, making it more difficult for one organization to manipulate or fabricate data.

4. Fan Involvement: Blockchain technology can direct fan involvement in certain governance issues, such as choosing team captains, casting votes for sportsmanship prizes, or funding neighborhood projects. This encourages supporters to feel invested and involved.



2.3.2. Ticketing Methods

1. **Enhanced Security:** Blockchain-based ticketing systems have strong security measures that virtually eliminate ticket fraud and scalping. The blockchain records every ticket, prohibiting duplication and guaranteeing validity.
2. **Scalability:** Blockchain ticketing enables smooth ticket exchange and resale among fans, helps people move away from middlemen and cuts down on transaction costs. This guarantees that more people can purchase tickets at reasonable prices.
3. **Fan Identity Verification:** Blockchain technology makes it possible to securely and privately verify a fan's identity. This ensures that tickets are only given to real fans and lowers the chance of ticket touting.
4. **Tracking revenue:** Using blockchain, sports organizations may keep track of ticket sales in realtime and learn more about the tastes and actions of their fans. Pricing decisions and marketing initiatives can be influenced by these data.
5. **Systems for ticketing that use blockchain technology** may include loyalty and reward programs. To attend games, take part in fan interaction activities, or support the team, fans can earn tokens or gifts, building fan loyalty.
6. **Management of the Secondary Ticket Market:** Blockchain technology makes it easier to keep track of the Secondary Ticket Market, allowing sports organizations to profit from secondary ticket sales and more effectively controlling ticket distribution.

3. Financing and business models that are new

3.1. The Development of Esports and Its Effects on Traditional Sports Administration

The emergence of competitive video gaming, or esports, has altered the landscape of traditional sports and presented new opportunities and difficulties for sports administration. Esports has rapidly become a multibillion dollar industry that draws an enormous worldwide participant and fan base. The following are its effects on conventional sports management:

1. **Change in population:** Esports may be taking resources and attention away from traditional sports since they have attracted a younger, more tech-savvy population. To effectively target this new generation, sports organizations must adjust their marketing and engagement techniques.
2. **Revenue Diversification:** Investing in esports can give sports organizations a fresh source of income when traditional sports experience uncertainty. Esports competitions, sponsorships, and media rights can all help a business stay afloat and expand.
3. **Talent management:** Because esports need unique skill sets, they draw a new generation of athletes and professionals. To find and develop esports talent, traditional sports management must modify its methodologies for talent scouting and development.
4. **Infrastructure and Facilities:** The growth of esports requires cutting-edge technology and infrastructure. To be competitive, traditional sports organizations might need to invest in esports arenas and training facilities.
5. **Cross-Platform Engagement:** Esports fans may engage with the sport through engaging and immersive experiences on digital platforms where it flourishes. To stay current, traditional sports management must use digital advances and provide interesting content.

3.2. Direct-to-Consumer and Subscription-Based Business Models in Sports Broadcasting

Traditional media distribution has been affected by the move toward subscription-based and direct-to-consumer (D2C) models in sports broadcasting. Bypassing established broadcasters, sports leagues and organizations are increasingly providing their programming to viewers directly through digital media. The following are the consequences for sports management:

1. **Fan Engagement:** Direct-to-consumer (D2C) business models enable sports companies to interact directly with fans, collecting crucial information and understanding that can be used to improve fan engagement and provide tailored content.
2. **Revenue Control:** By using subscription and direct-to-consumer models, sports organizations can exert more control over their monetization and content strategies while being less reliant on conventional broadcasters.
3. **Global Reach:** Sports organizations can reach a global audience through digital channels, which expands their fan base and may boost revenue from global markets.
4. **Customizable Content:** D2C models allow fans to pick and curate the media they wish to see, improving their pleasure and enjoyment.
5. **Technology Investment:** To support flawless streaming and user-friendly platforms, sports management must invest in reliable digital infrastructure and technology.

3.3. Investment Trends and the Influence of Private Equity on Sports Ownership

Private equity firms are becoming increasingly interested in making investments in the sports sector and buying shares of sporting groups. The ownership and management of sports are impacted by this trend:

1. **Financial Infusion:** Private equity investments can significantly increase the amount of money that sports organizations have available to support infrastructure growth, player acquisition, and marketing initiatives.
2. **Governance and Decision-Making:** As private equity investors look to optimize returns, sports organizations may undergo changes in their governance frameworks and decision-making procedures.
3. **Commercialization:** Private equity firms may concentrate on commercializing sporting franchises, looking into new revenue sources, and improving the financial performance of the company.
4. **Goals:** Long-term strategic planning in sports organizations may be impacted by the shorter investment horizons that private equity investors may have.
5. **Sports groups with private equity support** can be subject to more scrutiny in regard to their financial health and return on investment.

3.4. Financial Strategies in Sports Organizations Driven by Sustainability

To minimize their environmental impact and maintain long-term financial viability, organizations are increasingly focusing on sustainability-driven financial strategies (Cury et al. 2023b). The following are the implications of sustainability-driven financial strategies:

1. **Cost effectiveness:** Sustainable techniques, such as reducing waste and conserving energy, can help sports organizations cut costs.
2. **Adopting sustainability efforts** can help an organization recruit eco-friendly sponsors and build its brand's reputation (Ahiabor et al 2023).
3. **Fan Engagement:** Fans, particularly the younger, environmentally concerned generation, respond favorably to sustainability initiatives, which strengthens fan engagement and loyalty.
4. **Regulatory Compliance:** To reduce legal risk, sports organizations must align with sustainability standards in light of the growing importance of environmental legislation.
5. **Long-Term Resilience:** Adopting sustainability-driven financial strategies can help sports organizations remain resilient in the face of long-term problems such as climate change (Eriksson et al 2023).

4. Social media use and fan engagement

Social media fan engagement has become an essential component of sports management, enabling sports organizations to communicate directly with their supporters and create vibrant, engaged communities. Utilizing social media channels improves the entire fan experience and provides several options for fan participation (Majumdar 2023). In this article, we examine the approaches to and difficulties associated with fan involvement on social media

4.1. Using Social Media Platforms to Promote Direct Fan Engagement

Sports organizations have direct ways to communicate with their supporters on social media sites such as Twitter, Facebook, Instagram, and YouTube. The following are important tactics for using social media to encourage fan interaction (Figure 2).



Figure 2 Social media fan engagement tactics and tools over time.

Real-Time Updates: To keep fans interested and informed, sports organizations can share scores, highlights, and significant events during games.

Q&A Sessions: Holding Q&A sessions with players, coaches, or team management enables fans to ask questions and obtain straightforward answers, strengthening feelings of connection and accessibility.

Polls and Surveys: By allowing fans to voice their thoughts on a variety of subjects through social media platforms, polls and surveys foster feelings of inclusion and involvement.

Exclusive behind-the-scenes content is shared to provide fans with a unique viewpoint and to deepen their emotional ties to the team. Examples include training sessions, locker room moments, and vacation experiences.

Table 2 presents key fan engagement metrics on different social media platforms, including the number of followers, engagement rates, and top-performing content types.

Table 2 Fan Engagement Metrics on Social Media Platforms.

Social Media Platform	Number of Followers (in millions)	Engagement Rate (%)	Top-Performing Content Types
Facebook	25.3	8.9	Video Highlights, Live Q&A
Twitter	14.6	6.5	Game Updates, Polls
Instagram	30.8	12.2	Behind-the-Scenes Photos, Fan-Submitted Content
YouTube	18.2	9.3	Player Interviews Match Analysis
TikTok	8.7	15.8	Fun Challenges, Dance Routines

4.2. Individualization and gamification in fan engagement techniques

The use of personalization and gamification approaches can result in customized, engaging fan experiences:

Personalized Content: Creating content that is tailored to the tastes of the audience, such as their favorite athletes, teams, or match highlights, improves fan engagement and promotes return visits.

Fan Loyalty Programmes: Promotion of loyalty and active involvement among fans by implementing fan loyalty programs that offer awards, badges, and points for participating in the team's social media content.

Interactive games and challenges: Hosting online competitions, tests, and challenges focused on a team or sport adds a fun and competitive element that encourages fans to participate and share their experiences.

4.3. Brand collaborations and influencer marketing to increase fan reach

The team's reach can be greatly increased, and new audiences can be engaged through influencer marketing and brand partnerships:

Working with Influencers: Working with influencers, such as well-known athletes, celebrities, or sports fans, helps the team spread its message and reach audiences outside of its current fan base.

Cross-Promotions: By partnering with other businesses, sponsors, or groups, you can increase the chances for fan engagement by aligning your interests and running joint promotions and campaigns.

4.4. Addressing Fan Behavior and Online Community Challenges

Additionally, controlling online communities and fan behavior on social media poses challenges:

Handling Negative Feedback: Sports organizations need to be ready to respond professionally and constructively to complaints made via social media.

Moderation and Community norms: Implementing moderation techniques and creating clear community norms aid in preserving a friendly and courteous online community.

Reacting to Controversies: To ensure open contact with fans, sports organizations must react swiftly and transparently to controversies or sensitive topics that emerge on social media.

5. Including Diverse Sports Management Groups

To promote talent, boost innovation, and connect with a varied fan base, a friendly and equitable workplace atmosphere that values diversity and inclusion must be fostered in sports management. Sports organizations will represent the larger population they serve if various facets of diversity are addressed. The following are the main tactics and programs for encouraging inclusion and diversity in sports management:

5.1. Supporting Diversity in Coaching and Leadership Roles

Equal Opportunities: Sports organizations should work hard to ensure that people from different backgrounds have equal opportunities to hold leadership and coaching positions. Aiming for or implementing diversity quotas can promote representation.

Diverse Recruitment: By implementing inclusive hiring procedures such as blind hiring or diverse interview panels, people may combat unconscious prejudices and guarantee a varied pool of candidates.

Education and Training: Promoting a culture that supports diversity and values other viewpoints involves educating and training leaders, coaches, and staff members on diversity and inclusion, as reported by Miragaia and Soares (2017).

Table 3 Diversity Initiatives in Sports Organizations.

Sr. No.	Diversity Quotas for Leadership	inclusive Marketing Campaigns
1	30% of leadership positions to be filled by individuals from underrepresented backgrounds by 2023	"Diversity Drives Excellence Campaign promoting diversity and inclusion in sports marketing initiatives
2	Commitment to gender equality in leadership positions by 2025 and diverse interview panels for recruitment	Sport for All" Campaign featuring athletes of various genders, ethnicities, and backgrounds
3	Ethnic diversity quotas for senior executive roles and representation from different regions by 2030	"Breaking Barriers Together" Campaign highlighting achievements of diverse athletes and communities
4	Inclusion rider in athlete contracts to promote diversity in marketing and media representation by 2022	"United in Diversity Campaign celebrating unity among athletes from diverse backgrounds"

Table 3 provides an overview of the diversity initiatives implemented by sports organizations. Initiatives include diversity quotas for leadership positions, inclusive marketing campaigns, and representation commitments to promote diversity and inclusion in the sports industry.

5.2. Diverse Fan Demographics Outreach and Inclusive Marketing

Cultural Sensitivity: Sports organizations should ensure that their marketing strategies and public relations initiatives are inclusive, sensitive to cultural differences, and successful with a variety of fan demographics.

Local Engagement: Sports organizations can effectively adjust their outreach efforts by interacting with local communities and learning about their particular needs and interests.

Inclusive Events: Organizing inclusive and diverse events, such as cultural festivals and awareness campaigns, aids in drawing in and retaining a wide range of fan bases.

5.3. Addressing Racism, Sexism, and Discrimination in Sports Issues

Anti-Discrimination Policies: It is essential to establish strict anti-discrimination policies that address sexism, racism, and other types of discrimination if one wishes to foster a welcoming and secure sports environment.

Diversity training: Educating athletes, coaches, staff members, and spectators on diversity issues can help reduce biases and discriminatory behavior.

Reporting Mechanisms: To ensure a timely and effective reaction to cases of discrimination and harassment, sports organizations should create private reporting channels.

Involving Athletes and Fans: Involving athletes and fans in initiatives to combat discrimination and promote inclusive behavior fosters a group effort to address these problems.

6. Environmental responsibility and sports administration

As the sports business has come to understand its relevance in tackling global environmental issues, environmental sustainability has taken on a prominent role in sports management. To reduce their ecological impact, sports organizations are progressively establishing green projects, adopting eco-friendly practices, and promoting climate action. The main components of environmental sustainability in sports management are as follows:

6.1. Environmentally Friendly Practices in Sports Facilities and Event Planning

Renewable Energy: To lessen reliance on fossil fuels, sporting facilities are switching to renewable energy sources, such as solar panels and wind turbines, power stadiums and training facilities.

Energy Efficiency: Energy consumption in sports facilities can be decreased by implementing energy-efficient technologies such as LED lighting and smart building systems.

Trash Management: Implementing plans for trash reduction and recycling promotes appropriate waste management during sporting competitions.

Water Conservation: Water-saving techniques, such as the use of rainwater collection and water-efficient fixtures, assist in lowering the amount of water used in sporting facilities.

6.2. Sustainable Sourcing and Eco-Friendly Sports Gear

Biodegradable and recyclable plastics are two examples of sustainable materials for which sports groups are encouraged to use sports equipment.

Responsive Sourcing: Ensuring that sporting goods and equipment are acquired from businesses that follow ethical and sustainable business practices helps to protect the environment.

6.3. Climate action and carbon neutrality in sports organizations

Carbon Offsetting: By funding initiatives that cut or sequester an equivalent amount of carbon emissions, sports organizations are committing to carbon offsetting.

Sustainable transit: Promoting the use of bicycles, public transit, or carpooling for sporting events helps players and fans leave less of a carbon footprint.

Green certifications: Achieving green certifications, such as ISO 20121 for sustainable event management, reflects a sports organization's dedication to environmental sustainability.

6.4. Sports Contribution to Raising Awareness of Global Sustainability

Education and Advocacy: Sports organizations use their platforms to educate athletes, spectators, and sponsors about environmental issues and promote sustainable practices.

Community Involvement: Getting local populations involved in sustainability projects such as tree-planting campaigns and environmental education efforts helps raise awareness of sustainability in general.

Partnerships and Collaborations: To increase their effect and create lasting change, sports organizations partner with environmental NGOs.

7. Sports event management that is innovative

For sporting events to remain relevant, draw crowds, and provide remarkable experience, innovative event management is crucial. Event planners are implementing cutting-edge technologies and creative strategies to improve fan engagement, forge enduring legacies, and guarantee safety and security as the sports scene changes. The following are the main components of creative sporting event management:

7.1. Response to Changing Audience Preferences with Hybrid and Virtual Events

Hybrid Events: These events serve a wide range of audiences by combining real-world and online components. While some fans might participate electronically via live streaming and interactive platforms, others can physically attend the event.

Virtual Events: With the help of augmented reality (AR) and virtual reality (VR) technologies, fully virtual sporting events may reach a global audience.

Fan interaction: Through real-time discussions, virtual cheering, and special digital content, innovative event management ensures that virtual guests may actively engage.

7.2. Hosting large-scale events with an emphasis on community involvement and legacy

Sustainable Infrastructure: Planning large-scale events with sustainability in mind can leave a positive legacy and have a smaller negative impact on the environment. Examples include using temporary constructions or repurposing existing facilities.

Community Involvement: Involving local groups in the organization and management of large-scale events encourages a sense of pride and ownership among locals.

Legacy Projects: Establishing enduring legacies, including social initiatives, infrastructural improvements, and sports development programs, benefits the host city long after the event is over.

7.3 Smart Stadiums and Event Technology for Better Fan Experiences

Smart stadiums provide dependable Wi-Fi and 5G connectivity, allowing visitors to access interactive content and share their experiences in realtime.

Mobile apps: Sports event apps give fans access to specialized timetables, interactive maps, and exclusive offers.

Augmented reality: Event technology incorporates augmented reality experiences to enhance fans' experience. Examples include interactive player stats and in-stadium AR games.

7.4. Measures for Safety and Security in Light of Changing Challenges

Health policies: To address health risks, event planners have established thorough health policies, which include immunization requirements, testing, and contactless services.

Crowd management: To ensure smooth access, exit, and movement within the venue, smart crowd management systems use data analytics and real-time monitoring.

Cybersecurity: As events rely more on technology, effective cybersecurity measures safeguard sensitive information and guard against security breaches according to Song and Guo (2023).

8. The welfare and health of athletes

The physical and emotional health of players significantly affects their performance and total career longevity; hence, athlete welfare and well-being have gained importance in sports management. Support for mental health, managing workloads, and addressing the effects of technological improvements on athletes are now priorities for sports organizations. The following are the vital components of an athlete's welfare and well-being:

8.1. Programs for Mental Health Support and Performance Enhancement

Mental Health Awareness: Sports groups educate the public about mental health concerns and dispel the stigma associated with athletes' mental health problems.

Professional Support: Giving athletes access to mental health specialists, such as sports psychologists and counsellors, enables them to deal with challenges and stressors on the psychological level.

Performance Optimization: To improve concentration, self-assurance, and resilience, performance optimization programs concentrate on mental skill training, such as goalsetting, visualization, and mindfulness.

Open Communication and Proactive Support were encouraged by **Creating a Supportive Team Culture and Environment where Athletes Feel Comfortable Discussing Mental Health Concerns** According to Lis and Tomanek (2020).

8.2. Juggling athletes' schedules and workload to prevent burnout

Workload Management: By putting workload management ideas into practice, athletes can be protected against overtraining and burnout by providing enough rest and recovery time.

Periodization: By incorporating periodization strategies into training and competition schedules, athletes' performance is optimized, and they are able to perform at their very best during important events.

Individualized Planning: Maintaining an athlete's physical and emotional health involves training and competition schedules that are specific to their needs and preferences.

Rest and recuperation: Athletes' bodies and minds recover more quickly when they schedule consistent rest days, recovery sessions, and active rest periods.

8.3. Understanding How Technological Advances Affect Athletes

Data Management: Using wearable technologies and gadgets to collect athlete data effectively guarantees that the data are used properly and in accordance with the athletes' best interests.

Privacy and Security: Athletes are protected from potential data breaches and misuse of personal information by implementing strong cybersecurity measures and safeguarding their data privacy.

Training Optimization: Using technology during training, such as motion tracking and video analysis, helps athletes develop techniques and reduce injury risk.

Managing Distractions: Teaching athletes how to use technology responsibly during practice and performance helps them stay focused and reduces distractions.

9. Legal and Ethical Issues in Sports Management

In sports management, ethical and legal issues are crucial for ensuring fair play, data privacy, and rule compliance. Sports organizations must address issues such as sports betting, data privacy, sports integrity, and legal difficulties in developing sports industries. The main components of ethical and legal considerations in sports management are as follows:

9.1. Maintaining Sports Integrity and Fighting Match Fixation and Corruption

Code of Conduct: Establishing a thorough code of conduct and ethics policy for participants, coaches, and staff members establishes clear guidelines for honesty and fair play.

Education and knowledge: Raising knowledge of corruption and match-fixing's negative effects among athletes and other stakeholders aids in the prevention of unethical behavior.

Monitoring and Reporting: Setting up mechanisms to keep an eye on sporting events and reporting any suspicious behavior makes it possible to spot and look into suspected corruption.

Cooperation with Authorities: The fight against sports corruption is strengthened by close cooperation with law enforcement agencies and international sports integrity groups (Ratten 2011).

9.2. *Player and fan information privacy and ethical use*

Compliance with Data Protection rules: To ensure the ethical gathering, storage, and use of player and fan data, sports organizations must abide by data protection and privacy rules.

Informed Consent: Obtaining people's consent before collecting personal information is essential for upholding ethical data practices.

Secure Data Storage: Protecting sensitive data from unwanted access and breaches requires the implementation of strong data security measures.

Transparent Data Policies: Building trust and responsibility among players, supporters, and other stakeholders requires openly disclosing data policies.

9.3. *The Changing Sports-Betting Landscape and Its Regulation*

Responsible Gambling: Sports organizations are required to support those who may be at risk of harm from gambling and to promote responsible gambling.

Compliance and Regulation: Cooperation with regulatory bodies and adherence to rules governing sports betting assure openness and justice in the sector.

Anti-corruption measures: To spot and stop suspected match-fixing operations, sports organizations must closely coordinate with betting operators and monitor betting trends in the industry.

Player Education: By informing athletes of the dangers of sports betting and the value of abiding by anti-gambling laws, the integrity of sports is preserved (Gholampour et al 2019).

9.4. *Addressing Legal Issues in New Sports Industries*

Contractual Agreements: Mitigating legal risks and uncertainties requires the development of thorough and transparent contractual agreements with athletes, sponsors, and other parties.

Intellectual property rights: To avoid unauthorized use and infringement in developing sports industries, protecting intellectual property rights, such as trademarks and copyrights, is essential.

Regulatory Compliance: Ensuring legal compliance requires keeping up with changing legislation in developing sports industries, such as esports and new sports technologies.

Player Safety and Liability: Protecting athletes and organizations requires addressing player safety concerns and potential liability issues related to evolving sports technologies (Sofyan 2022).

10. Final Considerations

Several major insights from the analysis of recent developments in sports management have been noted: **Technology Transformation:** Data analytics, artificial intelligence, virtual reality, and wearable technology have revolutionized athlete performance, spectator engagement, and decision-making processes. Technology has had an enormous impact on sports management. **Environmental sustainability** has become more important in sports management, with sports organizations embracing green programs, eco-friendly gear, and carbon neutrality measures to lessen their ecological impact. **Inclusivity and Diversity:** To create a more equitable and inviting sports environment, sports management is increasingly focusing on encouraging diversity and inclusion in leadership roles, fan engagement initiatives, and battling prejudice. **Revolution in Fan Engagement:** Social media and event technology have revolutionized fan engagement by enabling direct connection, customization, and gamification, boosting the overall fan experience and extending reach to a wide range of demographics. **Athlete Welfare and Mental Health:** In an effort to protect athletes' physical and mental health, mental health support, workload management, and ethical technology use are given greater priority.

Sports organizations and stakeholders must consider the following consequences of the new trends in sports management. To remain competitive and improve player performance, audience engagement, and operational efficiency, sports organizations must adopt technological innovations. It is essential for sports organizations to incorporate sustainable practices and activities to support international sustainability efforts and develop a positive brand image. Diversity in leadership, fan involvement, and representation all contribute to a more connected and inclusive sports community, which is advantageous to both athletes and spectators. To strengthen relationships and encourage brand loyalty, sports organizations can use fan-centric methods that include social media and event technology. Putting an emphasis on an athlete's mental health, workload management, and well-being results in better performance, a longer career, and an athlete's overall pleasure. The objective of this review article is to give sports professionals, scholars, and enthusiasts a current awareness of the new developments that are reshaping the field of sports management. Sports organizations may maintain competitiveness, promote sustainable growth, and provide improved experiences for athletes and fans alike in the dynamic world of sports by adopting these trends.

Ethical considerations

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Conflict of interest

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References

- Ahiabor DK, Kosiba JP, Gli DD, Tweneboah-Koduah EY, Hinson RE (2023) Satellite fans engagement with social networking sites influence on sport team brand equity: a ugt perspective. *Digital Business* 19:100064.
- Aljassar MA, Hoque KE, bin Syed Ali SK, Alali AA (2023) Professionalism in sports administration: a literature review. *International Journal of Professional Business Review* 8:e0870.
- Bilohur V (2019) Formation of the concept of innovative sports management in Ukraine. *Humanities studies* 1:27-38.
- Ciomaga B (2013) Sport management: a bibliometric study on central themes and trends. *European Sport Management Quarterly* 13:557-78.
- Cury R, Kennelly M, Howes M (2023) Environmental sustainability policy within australian olympic sport organisations. *International Journal of Sport Policy and Politics* 15:125-45.
- Cury R, Kennelly M, Howes M (2023) Environmental sustainability in sport: a systematic literature review. *European Sport Management Quarterly* 23:13-37.
- Drew MK, Toohey LA, Smith M, Baugh CM, Carter H, McPhail SM, Jacobsson J, Timpka T, Appaneal R (2023) Health systems in high-performance sport: key functions to protect health and optimize performance in elite athletes. *Sports Medicine* 7:1.
- Eriksson A, Pettersson R, Wall-Reinius S (2023) Environmental concerns in nature-based events: the permit process for organised outdoor recreation and sport. *Scandinavian Journal of Hospitality and Tourism* 7:1-9.
- Gardner A, Love A, Waller S (2023) How do elite sport organizations frame diversity and inclusion? a critical race analysis. *Sport Management Review* 26:339-60.
- Gholampour S, Noruzi A, Gholampour B, Elahi A (2019) Research trends and bibliometric analysis of a journal: *Sport Management Review Webology* 2019 16:223-41.
- Giusti-Gestri L (2023) Wearable technology may assist in reducing jockeys' injuries if integrated into their safety vests: a qualitative study. *Frontiers in Sports and Active Living* 5:1167110.
- Hugaerts I, Scheerder J, Zeimers G, Corthouts J, Van de Sype C, Könecke T (2023) Are sport organisations environmentally sustainable?— a website analysis of sport federations in Belgium. *European Sport Management Quarterly* 23:38-58.
- Iancu D, Robescu O, Istrate C, Iancu AG (2016) Management of sports organizations: concepts, skills, knowledge. *Valahian Journal of Economic Studies* 7:75.
- Keiper MC, Fried G, Lupinek J, Nordstrom H (2023) Artificial intelligence in sport management education: playing the AI game with ChatGPT. *Journal of Hospitality, Leisure, Sport and Tourism Education* 33:100456.
- Lis A, Tomanek M (2020) Sport management: thematic mapping of the research field. *Journal of Physical Education and Sport* 20:1201-8.
- López-Carril S, Anagnostopoulos C, Parganas P (2020) Social media in sport management education: introducing linkedin. *Journal of Hospitality, Leisure, Sport & Tourism Education* 27:100262.
- Mahony DF, Howard DR (2001) Sport business in the next decade: a general overview of expected trends. *Journal of Sport Management* 15:275-96.
- Majumdar A (2023) Predicting sports fans' engagement with culturally aligned social media content: a language expectancy perspective. *Journal of Retailing and Consumer Services* 75:103457.
- Meena JS, Choi SB, Jung SB, Kim JW (2023) Electronic textiles: new age of wearable technology for healthcare and fitness solutions. *Materials Today Bio* 28:100565.
- Miragaia DA, Soares JA (2017) Higher education in sport management: a systematic review of research topics and trends. *Journal of Hospitality, Leisure, Sport & Tourism Education* 21:101-16.
- Ratten V (2011) International sports management: current trends and future developments. *Thunderbird International Business Review* 53:679-86.
- Romagnoli S, Ripanti F, Morettini M, Burattini L, Sbroliani A (2023) Wearable and portable devices for acquisition of cardiac signals while practicing sport: a scoping review *Sensors* 23:3350.
- Seshadri DR, Harlow ER, Thom ML, Emery MS, Phelan DM, Hsu JJ, Düking P, De Mey K, Sheehan J, Geletka B, Flannery R (2023) Wearable technology in the sports medicine clinic to guide the return-to-play and performance protocols of athletes following a COVID-19 diagnosis. *Digital Health* 9 20552076231177498.
- Sofyan D (2022) The development of sports management research in Indonesia in the early twenty-first century: a bibliometric analysis. *Indonesian Journal of Sport Management* 2:28-37.
- Song L, Guo Y (2023) Design of large-scale sports event management system under the internet of things cad technology. *Computer-Aided Design and Applications* 20:78-88.

