

## **Goal-Driven Logistics—Shaping the Soccer Match Experience**

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*Crowd management at soccer matches—or “football” matches in Europe—presents significant logistical challenges that remain underexplored in supply chain academic literature. This gap is particularly notable given stadium access, internal venue layout, and post-event departure processes play a crucial role in shaping the fan experience. The interaction between logistical systems and psychological factors is essential in influencing the overall experience of thousands of attendees. This article delves into these dimensions, offering a comprehensive understanding of the complexities involved in managing large crowds in sports venues. Additionally, it proposes new research directions, particularly in examining how psychological insights can enhance crowd flow, safety, and fan satisfaction. By bridging the gap between logistics management and crowd psychology, this work opens innovative avenues for further exploration in event management and sports venue design. These findings have the potential to improve the soccer match experience for both clubs and fans, fostering a more seamless and enjoyable atmosphere that benefits all stakeholders.*

*Keywords:* crowd management, sport events, fan experience, logistics, soccer (football), stadium design

### **INTRODUCTION**

For several decades, scholars have examined the stadium-based soccer match as a memorable and emotionally charged experience for fans (Lee et al., 2012; Theodorakis, 2014; Helleu, 2019; Bromberger, 2022), including through a quasi-mystical lens (Fulconis & Paché, 2014). Chants, drums, colorful tifos, and the crowd's collective energy contribute to an immersive atmosphere. A match is not merely a live sporting event; it is a moment of intense identification, deeply rooted in emotional attachment to a team. Fans experience each play with fervor, and both victories and defeats are internalized as vivid memories associated with euphoria or frustration. Attending a match also entails a shared social experience with friends, family members, or even strangers. Rituals—such as songs, face paint and collective celebrations—foster a strong sense of community and reinforce the impression of belonging. Much of the marketing literature on stadium fan experiences highlights these emotional and social dimensions, emphasizing the interplay of collective exhilaration, team identification, and symbolic rituals. Holt (1995) demonstrated through a two-year ethnographic study of baseball fans in Chicago that the sporting event functions as a site of cultural consumption, extending beyond athletic performance. Fan attachment is thus not solely determined by on-field success, but also by the club's identity as a brand that conveys history, meaning, and values (Gladden & Funk, 2001; Paché & N'Goala, 2011). As Pingle & Adajar (2018) argue, values—as expressions of behavior—play a crucial role in generating economic outcomes, particularly in the context

of professional soccer, where substantial financial resources are required to attract elite players such as Cristiano Ronaldo or Kylian Mbappé.

While research on club-brand attachment rightly emphasizes the emotional bond between fans and their team, it often overlooks the crucial role of logistical factors in shaping the overall stadium experience. These operational dimensions—from access and circulation to service quality—substantially influence fan comfort and satisfaction. Wakefield & Blodgett (1994) demonstrated that logistical shortcomings, such as difficult access to the venue or poorly managed queues, can significantly diminish the positive effects of social interaction and festive atmosphere. Similarly, Yoshida & James (2010) argue that the perceived quality of stadium services directly impacts fans' likelihood of returning and their long-term loyalty to the club brand. According to their findings, inefficiencies in flow management—particularly in concession areas and restrooms—can lead to frustration, undermining the fan experience even when the sporting performance is satisfying. Conversely, smooth logistical operations enhance fans' enjoyment and extend the emotional resonance of the event. As Phonthanukitithaworn & Sellitto (2018) underline, well-designed infrastructure does more than ensure efficient movement and access; it also contributes to the excitement of the occasion by minimizing disruptive elements. In this sense, logistics serves a functional purpose and plays a symbolic role in sustaining fan engagement and reinforcing brand value.

In sum, the fan experience cannot be dissociated from the material and organizational elements that shape its overall quality beyond its emotional and social dimensions. This is particularly salient given that the experience of attending a soccer match begins well before the referee's opening whistle. The coordinated arrival of tens of thousands of fans requires the implementation of complex logistical systems capable of managing large-scale flows. When such systems fail, the consequences can be severe, leading to operational breakdowns and heightened tensions. The UEFA Champions League final on May 28, 2022, at the Stade de France in Saint-Denis (Paris), which featured Liverpool and Real Madrid, remains emblematic of such failure. Thousands of Liverpool supporters were funneled through a narrow underpass, creating a major bottleneck and widespread confusion. Despite the centrality of these logistical dynamics, fan experience has received little sustained attention in academic research on supply chain management. Yet the movement of fans—whether by public transport, private vehicle, or chartered bus—requires precise operational coordination to ensure fluid access to infrastructure and the safety of all attendees, particularly vulnerable groups such as children. Addressing this gap would offer a more holistic understanding of how logistical systems underpin the staging of large-scale sporting events.

In the context of logistics management within professional soccer, the most frequently examined dimension concerns team travel—often over long distances—which continues to raise pressing environmental concerns (Mabon, 2023; Domański, 2024; Khanna et al., 2024). Coordinating player transport, securing travel routes in collaboration with local authorities, and arranging exclusive areas for team vehicles are indeed critical to ensuring the smooth execution of matches. However, the broader logistical ecosystem—particularly the management of fan mobility—is equally vital and often underappreciated. Without the large-scale presence of fans, and in the absence of carefully coordinated logistical means, the match environment risks becoming sterile, as evidenced by closed-door games imposed by disciplinary bodies following past incidents. In this light, the logistics management of fan attendance should not be underestimated, as it significantly shapes the event's atmosphere and perceived quality. Poorly planned crowd flows can result in delays, safety concerns, and negative emotional experiences, all detracting from the spectacle and fans' willingness to return. Moreover, reduced attendance can have cascading commercial consequences. If stadiums lack vibrancy and fan engagement, the appeal of televised matches diminishes—raising the question: why should broadcasters and sponsors continue to pay premium rights fees for a product stripped of its festive, communal essence?

This article investigates the often-overlooked role of logistics management in shaping fan experience during professional soccer matches. The analysis is structured in three sections. The first section focuses on pre-match logistics, specifically the arrival process, examining the various mechanisms employed to manage fan movement and ensure a smooth entry; key elements include transport coordination, access infrastructure, and security protocols. The quality of this initial organization is crucial from a psychological standpoint, as it shapes the fan's first impression and sets the tone for the entire event. The second section

addresses in-stadium logistics, with attention to the management of internal flows, spatial organization, and the services provided to fans. This includes the optimization of concession stands, catering facilities, and waste management systems, all of which contribute to overall comfort and satisfaction. The third section explores post-match logistics, particularly stadium exits' orchestration and fans' dispersal. This phase is critical in forming a lasting perception of the event. Emphasis is placed on coordination with public transport systems and strategies to prevent congestion in parking areas, underscoring how well-executed end-of-event logistics are essential to delivering a seamless and memorable fan experience.

## BEFORE THE MATCH: ARRIVAL AT THE STADIUM

The fan experience begins long before kick-off, often starting with the journey to the stadium, which can span several hundred miles. For instance, Olympique de Marseille's distinctive and vibrant reputation in the South of France has prompted fans to travel from as far as Saint-Malo (810 miles) or Lille (630 miles), with group travel serving as a key socialization experience (Lestrelin et al., 2013). Upon arrival, effective fan flow management depends on detailed logistics management, including public transport coordination, parking, and security procedures. Specialized shuttles, dedicated lanes, drop-off zones, and real-time mobile app traffic updates help alleviate congestion. When infrastructure is well-designed and information is clearly communicated, the arrival process can proceed smoothly, reducing stress and frustration—assuming disruptions like hooliganism are avoided. However, during high-stakes matches—such as those between Madrid and Barcelona in Spain or Marseille and Paris in France (see Figure 1)—the influx of highly charged fans can lead to significant congestion in city centers where stadiums are located. In these situations, enhanced coordination between security personnel and public transport operators is essential to prevent bottlenecks and ensure a smooth and orderly arrival, as will be explored further.

**FIGURE 1**  
**CROWD AT THE ENTRANCE OF MARSEILLE STADIUM FOR A MATCH BETWEEN  
OLYMPIQUE DE MARSEILLE AND PARIS-SAINT-GERMAIN (OCTOBER 2021)**



Source: L'Equipe, October 28, 2021.

Once on the outskirts of the stadium, managing fan entrances becomes critical, particularly given the potential for deviant behavior, such as alcohol-related incidents, which violate an implicit organizational norm: not disturbing other attendees who seek to "have a good time" without enduring the aggression of certain fans (see McKee [2019] on deviant behavior and aggression). Smooth entry relies on effective logistics management, supported by several key components: digital ticketing systems to minimize queues at ticket counters, optimized security checkpoints, and the use of modern technologies, such as facial

recognition and mobile scanners, to identify banned individuals. Over the past three decades, the introduction of security gates, bag checks, and intelligent queue management for priority areas has significantly enhanced matchday security, focusing on attracting family audiences, as noted in the United Kingdom (Hall, 2010). However, hospitality logistics must also account for the unpredictable psychology of crowds, especially during high-stakes rivalries or large-scale events. Well-marked routes and strategically placed screening zones are vital for facilitating traffic flow and preventing bottlenecks at critical points. These measures help anticipate congestion and enable real-time adjustments to fan movement. Proper planning for peak crowd periods and the strategic sizing of infrastructure are essential to ensure that fans have a positive first impression of their experience.

Finally, ensuring infrastructure accessibility for people with reduced mobility is a critical aspect of organizing sporting events, especially in response to the growing demand for inclusivity, driven in part by supporter associations (García et al., 2017). Adherence to accessibility standards—such as ramps, elevators, and designated seating—remains essential to providing a positive experience for individuals with disabilities. However, there is still significant room for improvement in offering personalized support services and in training reception staff, particularly in older stadiums where infrastructure may present technical challenges. For instance, following its promotion to France's minor professional soccer league, Ligue 2, in May 2024, the French team from Martigues in the South of France was unable to use its stadium for six months due to necessary renovations to meet accessibility standards and ensure the reception of individuals with reduced mobility. Furthermore, clear, intuitive signage throughout the stadium facilitates smooth navigation. Fans with disabilities must be able to anticipate their journey with the aid of specialized apps or audio guidance systems to ensure ease of access. Logistics management that accommodates all types of audiences promote inclusivity, ultimately enhancing the image of the club and the stadium as welcoming spaces.

## **DURING THE MATCH: PRESENCE IN THE STADIUM**

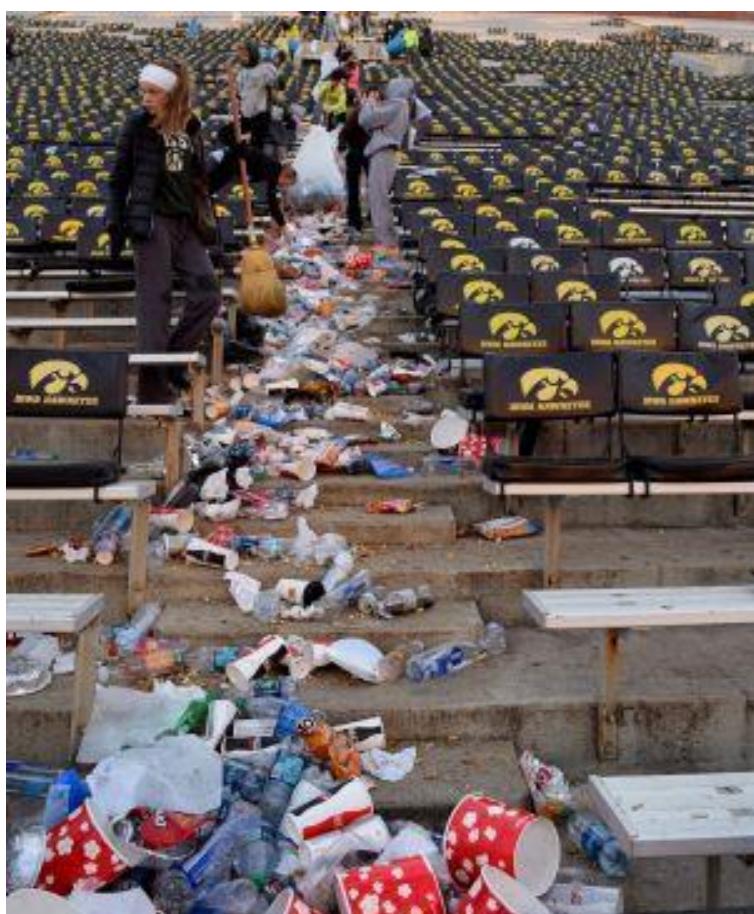
Once inside the stadium, logistics management continues to play a crucial role in ensuring fan comfort, as the organization of traffic flows within various areas is essential to prevent bottlenecks and guarantee optimal viewing for all attendees. The modernization of stadiums in Europe during the 1990s, driven by a “post-modernist” development approach (Paramio et al., 2008), eliminated the use of pillars supporting roof structures or grandstands, which had previously obstructed the view of certain parts of the field. The design of modern grandstands, featuring well-dimensioned staircases, access ramps, and multiple entrances, minimizes the risk of congestion and facilitates smooth movement. Strategically placed entrances allow fans to reach their seats quickly and without obstruction, which is essential for a seamless start to the event. Advanced technologies, such as digital tickets integrated with interactive stadium maps and mobile apps, further simplify navigation and optimize travel by directing fans to the least congested areas (Yang & Cole, 2022). Additionally, the incorporation of wayfinding agents and dynamic light panels, which adjust traffic flow based on attendee density, enhances overall movement. During peak times, this coordination significantly reduces frustration—such as missing the start of the match or a first goal—thereby improving the fan experience.

Catering and licensed merchandise sales present significant logistical challenges, as they represent a key revenue source, and delays in purchasing drinks, jerseys, or scarves can degrade the fan experience. Parry & Richards (2022) emphasize that the availability of food has always been a critical component of the overall match experience. To address these logistical requirements, it is essential to establish strategically located points of sale throughout the stadium, with a supply system matching the retail industry's operational efficiency. The integration of pre-ordering services through mobile apps and digital payment systems further optimizes transactions and minimizes queues (Martins et al., 2023), which are a major source of fan dissatisfaction. Some cutting-edge stadiums, such as Tottenham Hotspur Stadium (London), Santiago Bernabéu Stadium (Madrid), and Camp Nou Stadium (Barcelona), go even further by offering direct-to-seat delivery systems, allowing fans to enjoy the match without unnecessary interruptions. Additionally, real-time inventory management and the ability to adapt to consumer trends

provide powerful tools for enhancing service efficiency. Coupled with kitchen automation and the installation of order terminals, this helps to reduce meal preparation times, ensuring that fans' needs are met swiftly and efficiently.

A final crucial yet often overlooked aspect is waste management across various stadium locations, which presents a significant challenge for sports event logistics (Daddi et al., 2022). Figure 2 offers a glimpse of what a U.S. fan might experience at the end of a soccer match, with European stadiums facing similar issues. Effective infrastructure, such as strategically placed waste bins, clearly marked sorting stations, and responsive cleaning teams, is essential to maintain a pleasant environment throughout the event. These efforts directly impact fan comfort and their perception of the event's quality. The integration of automated sorting and recycling systems in select stadiums has streamlined waste management processes and encouraged fans to engage in more eco-responsible behavior. Additionally, the gamification of waste sorting, which rewards the most committed fans, has become an increasingly popular strategy to reduce the ecological footprint of major sporting events. This trend is gaining traction in a growing number of soccer stadiums across Europe (Skard, 2020), and the initiatives not only raise public awareness of sustainable practices but also enhance the stadium's reputation as an environmentally conscious venue. This is particularly effective when using reusable containers and biodegradable materials in catering is prominently featured and recognized by fans as a genuine commitment, rather than a superficial greenwashing effort.

**FIGURE 2**  
**STADIUM AFTERMATH MESS IN A U.S. FOOTBALL STADIUM**



Source: The University of Iowa  
Office of Sustainability and the Environment.

## AFTER THE MATCH: LEAVING THE STADIUM

Regardless of the team's performance, the post-match period is a pivotal moment in the fan experience, where logistics plays a crucial role in managing crowd flow. Ensuring the swift and safe exit of thousands of attendees while preventing incidents is essential. Soccer historians still reference the tragedy that occurred on May 24, 1964, at the Estadio Nacional del Peru in Lima, following a qualifying match for the Tokyo Olympic tournament between Peru and Argentina. Two minutes before the end of the match, a disallowed goal to Peru triggered a stampede outside the stadium, resulting in 328 fatalities and several hundred injuries, with fans trampled in the chaos, largely due to closed gates. Novelist Mario Vargas Llosa recounts this tragedy in his autobiography *La tía Julia y el escribidor* (1977), capturing an atmosphere of civil unrest, burned-out buildings, police firing live ammunition, and rampant looting. Thankfully, such incidents are rare today, though Cashmore & Dixon (2024) note a resurgence of violence in European stadiums. Modern stadiums now utilize dynamic signage systems that adjust exit routes based on crowd flow, guiding fans to the least congested exits. Security personnel and stewards work in tandem to ensure a smooth evacuation. This coordination maintains order and provides a positive post-match experience, especially for families, who can exit without the added "stress of responsibility," an issue extensively explored in psychology (Orquiza, 2024).

Post-match services, such as dedicated shuttles and carpool pick-up zones, are crucial for managing fan evacuation, helping minimize traffic flow stress and reducing waiting times. Smart systems, which allow for reservations through mobile apps, streamline parking management and alleviate traffic congestion around the stadium by ensuring smoother vehicle departures. However, research by Villiers et al. (2019) indicates that post-match traffic management remains a significant challenge, particularly when matches coincide with rush hour (see Figure 3). Public transport offers an alternative, with schedules adjusted to accommodate the increased number of passengers. In anticipation of immediate transport saturation, some clubs, in collaboration with local authorities, implement staggered departure times to prevent congestion. Additional measures, such as establishing post-match relaxation areas with open catering services, encourage fans to linger in the stadium, thereby reducing pressure on surrounding road infrastructure once the event concludes. This strategy aims to ease crowd movement by promoting a gradual dispersal of fans (for a comprehensive review of the literature, see Ha [2024]). These logistical solutions improve the fan experience and help ensure efficient management of traffic and crowds after high-attendance events.

Effective communication is crucial for managing the logistics of stadium exits. Clubs, local authorities, and law enforcement agencies must develop a comprehensive strategy to inform fans about the least congested exit routes and available services to facilitate quicker departure. This communication becomes even more critical when anticipating potential delays or changes in public transport schedules, caused by factors such as weather conditions, network disruptions, or unusually high fan attendance. As previously noted, dynamic signage, mobile apps, and audible announcements play a key role in directing people efficiently in real-time. When combined with proactive crowd management techniques, these measures ensure the smooth flow of fans, as poor organization can undermine the overall match experience (Johnnie & Fedebagha, 2025). If fans are stuck in long traffic jams or face overcrowded public transport, their frustration can negatively impact their perception of the event. Conversely, a well-coordinated, smooth evacuation enhances their overall satisfaction, leaving them with positive memories that strengthen their attachment to the team and the event itself. This positive experience is likely to encourage fans to return for future matches, contributing to the long-term success of the club and its fan engagement strategies.

**FIGURE 3**  
**TRAFFIC JAM IN MARSEILLE NEAR THE STADIUM AFTER A EUROPEAN MATCH**  
**(MAY 2022)**



Source: © Nicolas Debru/FTV.

## CONCLUSION

This exploratory article highlights the essential role of logistics management in enhancing the fan experience at soccer matches. It explores how logistical decisions made before, during, and after the event shape fans' overall perception. Key factors, such as transport management, optimizing movement within the stadium, catering and waste management, and smooth post-match departures, all play a crucial role in the success of the experience. From this perspective, meticulous logistical planning ensures not only fan safety and comfort but also reinforces the long-term image of the club. Moreover, the integration of innovative technologies, such as mobile apps for crowd flow management and digital payments, offers valuable insight into how logistical organization can meet the growing demand for efficiency. By addressing these often-overlooked aspects, the article provides a "roadmap" for sports event organizers. It stresses the importance of optimizing every stage of the fan journey, from arrival to departure. In doing so, it demonstrates how effective logistical organization contributes to creating truly unforgettable events and enhancing overall fan satisfaction. In short, this article, which fills a gap in academic literature, emphasizes the significant impact of logistics management on shaping fan experience and ensuring event success.

Although the investigation has methodically examined the logistical means associated with soccer match experience, several limitations warrant attention. First, my analysis primarily focuses on large-scale sporting events, specifically soccer matches involving top-tier professional teams, which may limit the applicability of the findings to other types of events. Smaller stadiums or lower-profile matches likely face distinct logistical challenges, often less apparent but equally significant. Second, the impact of external factors, such as weather conditions or unforeseen incidents, has not been considered. These factors can disrupt crowd flow organization, yet their influence on logistical operations is substantial. Additionally, internal factors related to human elements, such as staff training and customer relationship management, have not been explored in depth, even though they play a crucial role in the overall success (or failure) of the fan experience. Third, the analysis does not address the costs associated with the various logistical solutions, a critical factor in decision-making for clubs. These limitations provide a foundation for future

research to address these shortcomings and further refine our understanding of the logistical challenges in managing sporting events.

The first research avenue is to study the impact of artificial intelligence and the Internet of Things (IoT) on improved logistics management in stadiums. By enabling the most precise control of fan flows, security, and associated services, these technologies could revolutionize the fan experience. A second research avenue is to examine the logistical differences between modern and historic stadiums, particularly in terms of accessibility and the adaptation of infrastructures to contemporary needs. A third research avenue is to explore the impact of logistical performance on fan loyalty before, during, and after the match, by analyzing how smooth, seamless management can turn a simple, curious attendee into a fervent, long-term fan. In-depth behavioral analysis would provide valuable insights into the drivers of fan satisfaction. Finally, a fourth research avenue is to investigate the environmental impact of logistical choices associated with soccer matches and how the integration of sustainable practices can become a strategic issue in the coming years. These research avenues underline the extent to which the logistical means of the soccer match experience go beyond the simple technical management of fan flows, forming part of a broader reflection on the future of sports entertainment.

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