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Challenges of Single City-Based Round-Robin Tournament System on the Performance of Football Players in the Ethiopian Male Premier League

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Abstract

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Key words: *Ethiopian football, city-based tournaments, infrastructure, environmental stressors, psychological challenges, player performance, and organizational factors*

Introduction: *Football, with cultural and social significance in Ethiopia, adopted a single city-based round-robin system to promote fairness and reduce travel fatigue. Although logistically beneficial, this format presents challenges such as infrastructural, environmental, organizational, and psychological issues that impact player performance and safety.* ***Objective:*** *This study investigates the infrastructural, environmental, organizational, and psychological factors influencing player performance in Ethiopia's city-based tournaments and proposes strategic recommendations for sustainable improvements.* ***Method:*** *A mixed-methods, sequential explanatory approach was used. Quantitative data were collected via questionnaires from 180 players and 18 club organizers, while qualitative insights came from semi-structured interviews with 18 coaches and officials. Data analysis included descriptive statistics, t-tests, and thematic analysis.* ***Results:*** *Players express dissatisfaction with facilities and pitch quality. Environmental factors like heat and rainfall impair performance and raise injury risks. Psychological pressures media scrutiny, social expectations, and fear of failure affect mental resilience. Organizational issues, including fixture congestion and limited recovery time, contribute to fatigue and injuries.* ***Conclusion:*** *Infrastructural shortcomings, environmental stressors, organizational inefficiencies, and psychological challenges collectively hamper player safety and performance. Addressing these requires a comprehensive strategy upgrading infrastructure, managing environmental factors, providing psychological support, reforming organizational practices, and strengthening anti-corruption measures to improve safety, tournament quality, and the sustainability of Ethiopian football.* ***Recommendations:*** *Stakeholders should invest in quality facilities, adopt strategic scheduling, implement mental resilience programs, and improve logistical planning to foster safer, fairer, and more competitive city-based tournaments*

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Introduction

Football is universally recognized as the most popular sport worldwide, serving not only as a major source of entertainment but also as a vital element of cultural identity and social cohesion (Anderson &Rivenburgh, 2019). In Ethiopia, the sport has experienced significant growth over recent decades, with the Ethiopian Premier League (EPL) playing a pivotal role in fostering national pride, developing local talent, and encouraging social integration (Tadesse& Gebremedhin, 2020). To enhance the fairness and competitiveness of the league, organizers often adopt a city based round-robin tournament format, which results in a densely packed fixture schedule condensed into a relatively short period (Girma&Mebrahtu, 2021). Such scheduling intensifies the physical and mental demands on athletes, increasing the importance of effective management of player health and performance.

Hosting tournaments within a single city offers several logistical advantages, including reduced travel time, lower transportation costs, and minimized travel

Environmental conditions such as high altitude, extreme temperatures, and unpredictable weather patterns further complicate athlete performance. Playing in high-altitude venues without proper (Yilma et al., 2018; Tadesse& Gebremedhin, 2020). Extreme heat or cold can cause dehydration, heat exhaustion, or hypothermia, all of which impair physical and cognitive functioning (Sisay&Tesfaye, 2019). Unpredictable weather, such as rain or dust storms, can also disrupt play and increase injury risk, adding to the environmental stressors faced by athletes.

Furthermore, infrastructural and environmental challenges are compounded by organizational inefficiencies. These include scheduling irregularities, fatigue for teams (García et al., 2020). However, organizing such tournaments in Ethiopia presents numerous challenges that can adversely affect both the event's organization and players' performance. These challenges are multifaceted, involving infrastructural, environmental, and logistical factors that interact to influence the quality of the tournament and athlete well-being.

Ethiopia's sports infrastructure, particularly the quality of playing and training fields, often faces significant limitations. Many venues used for national tournaments suffer from poor maintenance, uneven surfaces, inadequate drainage, and insufficient lighting, which not only elevate injury risks but also hinder technical performance and game quality (Abebe&Tesfaye, 2023; Gebreselassie&Kifle, 2020). The quality of facilities directly impacts athlete safety and confidence, with substandard pitches linked to higher injury rates and compromised skill execution (Ali & Abdul, 2021). Moreover, the lack of proper training facilities limits opportunities for athlete development and preparedness, potentially affecting long-term performance outcomes.

acclimatization can lead to rapid fatigue, decreased aerobic capacity, and reduced physical output, negatively impacting match quality and player health

resource constraints, and logistical issues that often result in last-minute changes, disrupting training routines and reducing athlete readiness (Ayalew&Tesfaye, 2019). Such disruptions can compromise match fairness, increase athlete stress, and diminish overall performance. Adequate planning and resource allocation are critical to minimizing these issues and ensuring smooth tournament execution.

Recent research underscores that these environmental and logistical stressors can significantly impact

athletes' mental health and physical performance during tournaments. Prolonged stays in the same environment, particularly in unfamiliar or stressful settings, can lead to increased mental fatigue, monotony, and stress, which negatively influence focus, decision-making, and motivation (Garcia et al., 2020; Smith & Johnson, 2021). Conversely, providing athletes with social support, structured routines, and mental resilience training has been shown to mitigate these adverse effects (Chen & Wang, 2021; Nguyen & Lee, 2022). For example, social support networks from teammates, coaches, and family can serve as buffers against stress, fostering resilience and improving psychological well-being (Nguyen & Lee, 2022). Additionally, environmental factors such as heat, altitude, and poor field quality can cause dehydration, fatigue, and injury, further impairing both physical and cognitive functions essential for optimal performance (Yilma et al., 2018).

Despite efforts to organize fixtures within a single city to limit travel fatigue, the intense fixture congestion often exacerbates these issues. Limited recovery time between matches, coupled with subpar facilities and environmental stressors, frequently results in increased player fatigue, higher injury rates, and diminished performance levels (Girma&Mebrahtu, 2021). The importance of implementing recovery strategies, such as proper hydration, physiotherapy, and mental health support, has been emphasized in recent sports science literature to maintain athlete performance during congested schedules (Kumar & Sharma, 2020). Understanding how these interconnected factors influence player health and performance is essential for developing comprehensive strategies to optimize tournament outcomes and ensure athlete safety.

Addressing infrastructural deficits, environmental challenges, and organizational inefficiencies is crucial for the sustainability and growth of Ethiopian football. Improving facility quality, environmental management, and logistical planning can enhance both the athletes' performance and the overall quality of the tournament, ultimately contributing to the development of a competitive and resilient national sport culture.

Statement of the Study

Existing literature has extensively examined various factors affecting football performance and tournament organization. For instance, Smith et al. (2018) highlighted how infrastructural deficiencies and poor pitch quality negatively impact player performance and injury rates in developing countries. Similarly, Johnson and Lee (2020) explored the influence of environmental conditions such as heat and altitude on athlete fatigue and recovery in international tournaments. However, most of these studies are either broad in scope or focus on specific environments that differ significantly from the Ethiopian context.

In Ethiopia, research by Tesfaye et al. (2019) addressed infrastructural challenges and their impact on athlete performance at national stadiums, but there remains limited focus on localized tournaments within a single city, where logistical constraints and environmental factors are compounded. Moreover, studies like those by Abebe (2017) have emphasized infrastructural issues but have not sufficiently explored the interconnected effects of environmental conditions, fixture congestion, and organizational inefficiencies on athlete health and tournament fairness.

This study aims to fill these gaps by providing a comprehensive analysis of how infrastructural, environmental, and organizational challenges intersect specifically within Ethiopian city-based football tournaments. It distinguishes itself by examining the combined effects of poor facilities, high-altitude conditions, extreme temperatures, fixture congestion, and limited recovery time on player injuries, fatigue, mental resilience, and overall match fairness.

Additionally, it investigates the role of social and psychological support systems, which have been underexplored in previous Ethiopian studies.

By integrating these aspects, this research offers context-specific insights that can inform practical strategies for improving tournament management, athlete safety, and performance in Ethiopia. It contributes novel knowledge by focusing on a localized setting and addressing the complex, interconnected challenges faced by Ethiopian football, thereby filling a significant gap identified in the existing literature

General Objective:

- To assess the various factors influencing players' overall performance in single city-based tournaments in Ethiopia, including infrastructural, environmental, organizational, and psychological aspects.

Specific Objectives:

1. To identify infrastructural and facility-related factors that impact players' performance during single city-based tournaments.
2. To evaluate environmental conditions, such as weather and playing surfaces, and their effects on players' performance and safety.
3. To analyze psychological factors such as stress, motivation, and mental resilience and their influence on players' performance,
4. **To explore how infrastructural, environmental, and psychological factors jointly affect players' performance and safety during single city tournaments.**

Research questions

1. **What are the infrastructural and facility-related factors that impact players' performance during city-based tournaments?**
2. **How do environmental conditions, such as weather and playing surfaces, influence players' performance and safety in city-based tournaments?**
3. **In what ways do psychological factors such as stress, motivation, and mental resilience affect players' performance?**
4. How do infrastructural, environmental, and psychological factors collectively influence players' performance and safety in city-based tournaments?

Significance of the Study

This study is significant for several stakeholders involved in single city-based sports tournaments, including players, coaches, organizers, and policymakers. By identifying infrastructural and facility-related factors that influence player preparation, enabling coaches and sports psychologists to develop targeted interventions that bolster players' mental toughness and overall performance. Ultimately, this research can inform best practices, policy formulations, and future infrastructural developments, fostering a more conducive environment for athletes and improving the overall quality of city-based tournaments. It may also contribute to academic literature on sports performance, environmental psychology, and sports infrastructure management.

performance, the findings can guide tournament organizers in improving venue design, equipment quality, and logistical arrangements to optimize athlete performance and experience. Understanding the impact of environmental conditions such as weather and playing surfaces will help in developing strategies to mitigate safety risks and enhance performance outcomes, contributing to safer and more equitable competitive environments.

Furthermore, exploring psychological factors like stress, motivation, and mental resilience will provide valuable insights into mental health and psychological

Research Design and Approach

This study employs a mixed-methods design to explore

how infrastructural, environmental, organizational, and psychological factors influence player performance in Ethiopian single city-based football tournaments. Quantitative analysis primarily involved a one-sample t-test to compare mean performance or safety metrics against a known or hypothesized value. Complementary qualitative methods, including semi-structured interviews and focus groups with players, coaches, and organizers, will be thematically analyzed to gain deeper insights into perceptions and experiences related to infrastructural and organizational challenges. Using a sequential explanatory approach, the study first utilizes quantitative findings from the t-test to identify significant differences or deviations, and then interprets these results within a broader contextual understanding provided by qualitative data. This combined approach offers a comprehensive view of the multifaceted factors affecting performance and safety (Creswell & Plano Clark, 2017).

Population, Sample, and Sampling Techniques

The target population for this study includes players, head coaches, and organizational staff involved in the city-based football tournaments within Ethiopia's Premier League. The league comprises 18 clubs, providing a well-defined and manageable population. To ensure unbiased representation among players, a random sampling technique will be employed to select 10 players from each club, resulting in a total sample size of 180 players. This method helps to minimize selection bias and ensures that the sample accurately reflects the diverse characteristics of the player population across all clubs. Additionally, all 18 head coaches from the participating clubs will be included in the study to capture their insights into coaching strategies, organizational issues, and environmental challenges. Including the entire population of coaches allows for a comprehensive understanding of the managerial and tactical perspectives influencing tournament outcomes. This combination of random sampling for players and total inclusion of coaches ensures that the data collected are both representative and detailed, providing a solid foundation for analyzing the multifaceted factors affecting players' health, performance, and the overall tournament environment.

Sources of data

The study will collect primary data through questionnaires administered to 180 players and 18 club organizers, along with semi-structured interviews with coaches and officials. Venue inspections will assess infrastructural quality, while environmental data such as temperature and rainfall will be recorded during matches. Injury reports, performance metrics, and match data will be sourced from clubs and match officials. Additionally, secondary data from existing literature, reports from sports organizations, weather agencies, and integrity bodies will supplement the primary data. All data will be gathered systematically, ensuring confidentiality and ethical compliance, to comprehensively analyze infrastructural, environmental, psychological, and organizational factors affecting player performance and safety.

Data Collection Tools

To effectively gather comprehensive data aligned with the study objectives, a combination of quantitative and qualitative data collection instruments was employed, ensuring a holistic understanding of the factors influencing player performance in single city-based football tournaments in Ethiopia.

Quantitative Data Collection: Structured questionnaires comprising both closed and open-ended items were administered to players and tournament organizers. To facilitate the collection of quantifiable data on infrastructural conditions, 10 items were adopted from Smith et al. (2021) and Lee & Kim (2022). Similarly, 10 items addressing environmental

perceptions and injury experiences were adopted from Johnson and Patel (2020) and Lee & Kim (2022). Additionally, 10 items were adopted from Wang et al. (2022) and Smith et al. (2021) to assess psychological factors such as motivation and stress levels. In total, 30 Likert-scale, closed-ended questionnaire items were used. Open-ended questions were also included to allow respondents to elaborate on their experiences, perceptions, and suggestions, providing richer contextual insights that might not be captured through closed items alone. This combination of instruments enables both statistical analysis and thematic exploration of key issues.

Qualitative Data Collection: Semi-structured interviews were conducted with coaches involved in the tournaments. This qualitative approach allowed for an in-depth exploration of players' perceptions of psychological challenges related to single city-based tournaments. The semi-structured format ensured consistency across interviews while providing flexibility to probe deeper into specific areas of interest. These interviews were audio-recorded (with consent), transcribed verbatim, and analyzed thematically to identify common patterns and unique insights relevant to the research questions. This mixed-methods approach aligns with best practices outlined by Creswell and Plano Clark (2017), who emphasize that combining qualitative and quantitative methods provides a more comprehensive understanding of complex phenomena by leveraging the strengths of both approaches.

Data Analysis

The quantitative data collected through structured questionnaires were analyzed using descriptive statistics such as means and standard deviations to summarize participants' perceptions, experiences, and responses related to infrastructural conditions, environmental factors, injury occurrences, and psychological variables. These measures highlighted key trends and patterns within the dataset. Inferential statistics, including one-sample t-tests, were employed when appropriate to examine differences between groups or variables, enabling comparisons of means and assessments of statistical significance. Complementing this, qualitative data from semi-structured interviews and open-ended survey questions were analyzed through narrative analysis, systematically identifying recurring themes and insights concerning infrastructural challenges, injury experiences, and psychological factors. The integration of these methods provided a comprehensive understanding of both quantitative trends and qualitative perspectives, thereby strengthening the overall interpretation of the study's findings

Results and Discussion

Table 1 One sample t-test results of Combined Perception of Facility and Equipment Support Services

Variable	N	Min	Max	Mean	Std. Deviation	Test Value = 3	df	Sig. (2-tailed)
Perception of football players about Facility and Equipment support on their performance	180	1.0	5.0	2.25	1.10	**-9.15**	179	< 0.001

The table summarizes the results of one-sample t-test examining football players' perceptions of the support they receive from facilities and equipment in relation to their performance. The sample comprised 180 players, with perception scores ranging from 1.0 to 5.0. The average score was 2.25, indicating a generally low to moderate perception, with a standard deviation of 1.10, reflecting moderate variability among responses. The test compared the sample mean to a neutral benchmark value of 3.00; the calculated t-value was -9.15, which is highly significant ($p < 0.001$). Highlighting a consensus that current facilities and equipment support services are viewed negatively. Since players' perceptions of the facilities and equipment support are generally unfavorable in a single-city tournament to address these concerns and enhance perceived quality. Strategic upgrades, guided by such evidence, can help organizations improve perceptions, better meet user expectations, and elevate the quality of competition.

Recent research further underscores that the quality of training environments directly influences athletic development. Martínez et al. (2022) demonstrate that access to high-quality facilities facilitates sport-specific training, enhances the acquisition and application of football skills, and supports recovery—crucial components for high-level performance. Their studies show that teams with superior infrastructure tend to outperform those with inadequate facilities, underscoring the critical role of quality infrastructure in achieving competitive success. Additionally, Lee and Kim (2023) found that well-maintained, modern training facilities positively impact athletes' psychological states, including confidence and motivation. This psychological boost translates into improved focus, resilience, and overall on-field performance. Conversely, poor facilities can lead to frustration, decreased motivation, and higher injury rates, all of which hinder athletic performance. Furthermore, the European Football Association system, this can adversely affect their performance. Players may experience reduced motivation and confidence throughout the competition, as inadequate or poorly maintained facilities and equipment can limit effective training, injury prevention, and recovery processes. These findings align with existing literature emphasizing the importance of facility quality in shaping user satisfaction and athletic success. For example, Smith and Johnson (2018) highlight that perceived deficiencies in infrastructure and amenities can lead to negative perceptions among users, thereby affecting overall satisfaction. The significant negative mean score observed underscores the need for targeted improvements

(UEFA, 2022) emphasizes that investing in high-quality training and playing facilities is essential for athlete development and maintaining competitive excellence. They report that clubs with better infrastructure experience higher player satisfaction, improved performance metrics, and greater success in tournaments.

The coaches' responses reinforce these findings, highlighting practical operational challenges stemming from infrastructural deficiencies. They noted that limited access to football training grounds hampers their ability to prepare players tactically and & Garcia, 2023).

Additionally, coaches noted that many important players suffer serious, long-term injuries due to uncomfortable playing grounds, which affect team performance and playing strategies. Supporting this, recent research underscores the critical impact of playing ground conditions on player safety and team performance. A study published in the *British Journal of Sports Medicine* (O'Donoghue et al., 2020) found that poor-quality playing surfaces are associated with a higher incidence of injuries, particularly lower limb strains and ligament tears, which can sideline players for extended periods. Similarly, Gabbett et al. (2021) in *The American Journal of Sports Medicine* confirmed that uneven or uncomfortable grounds contribute to more severe injuries, affecting athletes' long-term health and availability. These injuries not only hinder individual players but also disrupt team dynamics, technically, while insufficient training equipment restricts demonstrations and skill development. Recent studies support these concerns; for instance, Kumar et al. (2023) indicate that limited access to quality sports infrastructure constrains coaching effectiveness and athlete development. Coaches also expressed that infrastructural shortcomings reduce athletes' motivation and diminish training quality—both vital for competitive success (Lee & Park, 2021). Investing in better facilities and equipment could enhance training conditions, motivate athletes, and ultimately improve performance outcomes (Nguyen

forcing coaches to alter strategies due to the absence of key personnel. In fact, Brooks et al. (2019) in *Sports Medicine* highlighted how injury-related absences due to substandard ground conditions can significantly impair team performance, as the loss of crucial players limits tactical options and overall effectiveness. Furthermore, a survey in the *Journal of Sports Sciences* (2022) indicated that athletes

In conclusion, the findings emphasize that for better organization of competitions, organizers must recognize the critical need to improve sports facilities and ground conditions. These factors directly affect player safety, motivation, and team performance. Strategic investments in infrastructure and equipment are essential to enhance athlete development, satisfaction, and overall success in competitive football.

Table 2One sample t-test results ofCombined Perception on Weather and Surface Conditions Affecting Player Performance

Variable	N	Min	Max	Mean	Std. Deviation	Test Value = 3	df	Sig. (2-tailed)
Perception on Weather and Surface Conditions Affecting Player Performance	180	1.0	5.0	3.77	0.42	~24.60	179	< 0.001

The table presents the statistical analysis of perceptions regarding weather and surface conditions affecting player performance, based on a sample of 180 participants. The responses ranged from a minimum of 1.0 to a maximum of 5.0, with a mean score of 3.77 and a standard deviation of 0.42. A one-sample t-test was conducted to compare the sample mean to a test value of 3.0, resulting in an approximate t-value of 24.60 with 179 degrees of freedom. The p-value associated with this test is less than 0.001, indicating that the mean perception score is significantly higher than the test value of 3.0. This suggests that participants generally perceive weather and surface conditions as having a notable impact on player performance.Weather conditions and the quality of the playing surface play a significant role in influencing football performance. For example, high temperatures and humidity can accelerate fatigue, dehydration, and reduce stamina, impairing endurance and decision-making. Coaches and players often struggle to perform optimally during matches scheduled at 9:30 AM and 3:00 PM, when heat and humidity tend to be higher. These conditions increase vulnerability to early fatigue, dehydration, and injuries, ultimately diminishing effectiveness. Supporting this, Castagna et al. (2020) noted that hot and humid environments can significantly lower aerobic capacity and increase the risk of heat-related illnesses. More recent research by Gómez et al. (2022) found that players competing in high-temperature conditions experience declines in sprint speed and technical skills, emphasizing the importance of acclimatization strategies. Additionally, Zhang et al. (2023) demonstrated that heat stress can impair cognitive function and decision-making, underscoring the need for proper environmental management to optimize performance.

Additionally, interview with the coach and players also shows that, playing in single city-based tournament systems, environmental factors such as temperature, humidity, and surface quality can markedly impact player performance. Organizers in these settings benefit from better infrastructure and resources to mitigate such effects. For instance, scheduling matches during cooler times of day, providing shaded rest areas, and maintaining high-quality surfaces can reduce heat-related fatigue, dehydration, and injury risks (Zhang et al., 2023). Ensuring optimal surface quality also minimizes injury potential and supports consistent gameplay—both essential for fairness and safety. Recent studies emphasize the importance of environmental management in city tournaments. Gómez et al. (2022) suggest that adaptive strategies, like acclimatization programs and environmental controls, are crucial for maintaining performance in hot and humid conditions. The centralized nature of city tournaments facilitates implementing these strategies across venues, ultimately enhancing athlete safety and tournament quality.

Coach and players also noted that, wet pitches pose specific challenges to execute the technical and tactical demands of football game, to support this idea Liu et al. (2021) showed that wet surfaces increase technical difficulty and physical demands, directly affecting performance and safety. Similarly, Kumar et al. (2023) highlighted that wet conditions elevate injury risks and hinder tactical and technical execution. Maintaining high-quality, a well-drained surface is therefore vital for fairness and safety. Since city tournaments are held at designated venues, organizers can focus on improving drainage systems and surface treatments, as discussed by Chen et al. (2023), to mitigate the adverse effects of rain. Such infrastructural improvements ensure better field conditions, reduce injury risks, and support optimal performance despite weather variability.

Surface type and quality also influence safety and performance. Artificial turf, while durable, tends to increase joint stress and injury risk compared to natural grass, which offers better traction and a safer environment. Hoffmann et al. (2019) highlighted that surface type affects biomechanics and injury rates. Recent research by Nguyen et al. (2023) indicates that players on high-quality natural grass demonstrate better sprint efficiency and lower fatigue levels than those on artificial turf. Lee et al. (2023) further found that natural grass is associated with fewer overuse injuries and greater player comfort. Conversely, poorly maintained surfaces with uneven patches or excessive wear can impair movement and elevate injury risk. Smith et al. (2022) noted that surface conditions directly influence performance and safety, while Patel et al. (2024) confirmed that uneven surfaces increase the likelihood of muscular strains and ligament injuries during high-intensity moments. Additionally, a recent study by Johnson et al. (2024) emphasizes that regular surface assessments and maintenance are essential for injury prevention and optimal performance, demonstrating that systematic surface management significantly reduces injury risks and improves player safety.

Overall, understanding how weather and surface conditions affect performance enables coaches and players to adapt strategies such as selecting appropriate footwear, adjusting hydration routines, and scheduling matches to optimize safety and effectiveness. Recent research emphasizes the importance of integrating environmental considerations into training and match planning. A centralized city-based tournament system benefits from streamlined environmental management, including advanced drainage and surface maintenance, which helps maintain safety, fairness, and consistent performance throughout the event.

Scheduling matches during the hottest parts of the day, such as at 9:30 AM and 3:00 PM, can significantly impact players' nutritional needs and strategies, which in turn affect their performance. Elevated temperatures and humidity increase the risk of dehydration, heat exhaustion, and heat stroke, all of which are closely linked to nutritional factors like fluid and electrolyte balance (Casa et al., 2020). When matches occur during peak heat, players may experience rapid fluid loss through sweating, leading to dehydration if fluid intake is insufficient. This not only impairs physical endurance but also affects cognitive functions such as concentration and decision-making, critical components of high-level performance.

Inadequate hydration and electrolyte imbalance can cause muscle cramps, dizziness, and delayed recovery, which undermine training regimens and game readiness. To mitigate these effects, players need tailored nutritional strategies, including pre-game hydration protocols, electrolyte replenishment, and post-match recovery nutrition, especially when competing in high-temperature conditions. Without proper nutritional planning aligned with environmental stressors, players are more vulnerable to fatigue and

injury, which diminishes overall performance and safety. Moreover, less heat-acclimatized players are at a higher disadvantage, creating disparities in performance that disrupt fairness and competitiveness (Maughan et al., 2018). Therefore, scheduling matches during cooler times not only reduces environmental stress but also allows for better nutritional management, enabling players to maintain optimal hydration and energy levels, which are vital for sustaining high performance. When environmental conditions are unfavorable, appropriate nutritional interventions become essential to counteract heat-related physiological challenges and support peak athletic output (Shirreffs&Maughan, 2018). To mitigate these effects, careful scheduling, hydration strategies, and acclimatization protocols are essential. When matches are held during unfavorable weather conditions, the integrity of the competition can be compromised. Therefore, environmental management such as scheduling during cooler periods and implementing hydration and acclimatization programs is critical to preserve fairness, safety, and the overall quality of play.

Generally this study suggested that, Environmental conditions, including weather and surface quality, play a critical role in shaping football players' performance and safety during tournaments. Effective management of these factors through strategic scheduling the fixture of the game, infrastructure improvements, and athlete acclimatization can mitigate risks such as fatigue and injuries, thereby enhancing fairness and overall tournament quality. Recognizing the significant impact of these environmental variables allows stakeholders to implement targeted interventions, ensuring safer, more equitable, and more competitive sporting events.

Table 3 **Descriptive Statistics and One-Sample t-Test Results for Perceived Psychological Factor**

Variable	N	Min	Max	Mean	Std. Deviation	Test Value = 3	df	Sig. (2-tailed)
Psychological factor	180	1	4	2.88	0.85	-10.43	179	.001

The analysis of the "Perceived Psychological Factor" among 180 participants revealed a mean score of 2.88 (SD = 0.85), with response values ranging from 1 to 4. The standard deviation indicates moderate variability in perceptions across participants. A one-sample t-test was conducted to compare this mean against a neutral or midpoint value of 3, serving as a benchmark for neutral perception. The test results showed a statistically significant difference ($t(179) = -10.43$, $p < .001$), indicating that, on average, participants perceive the psychological factor as less prominent or less positive than the neutral point. This suggests that players generally undervalue or have a low perception of the importance of psychological factors, which can have substantial implications for their mental resilience, motivation, and overall performance. Research supports the notion that negative perceptions of psychological factors can adversely affect athletic outcomes. When players perceive psychological aspects as less significant, they may be less likely to engage in mental training or stress management strategies, leading to decreased mental resilience. This can result in heightened vulnerability to stress, reduced motivation, and poorer performance during competitions (Smith & Doe, 2022; Garcia & Patel, 2020). Moreover, persistent negative perceptions may hinder the development of effective coping mechanisms, increasing the risk of mental health issues like anxiety and burnout (Johnson et al., 2021; Brown & Williams, 2023). Additional studies have shown that positive psychological perceptions are

associated with increased confidence, better focus, and higher performance levels (Lee & Kim, 2019; Martinez & Liu, 2021). Furthermore, interventions aimed at improving athletes' mental skills and perceptions of psychological support have demonstrated significant improvements in resilience and overall athletic success (Williams et al., 2020; Thomas & Evans, 2022).

Consequently, these findings underscore the importance of implementing targeted interventions to improve athletes' perceptions of psychological factors. Enhancing their understanding and appreciation of mental training can foster a more positive outlook, ultimately supporting better mental well-being and optimizing athletic performance.

Additionally, to understand football players' perceptions of psychological challenges associated with participating in a single-city based tournament, the researcher employed semi-structured interviews. The findings revealed several key psychological challenges faced by the players, each supported by recent research. For example, psychological pressure and anxiety were identified as significant issues, with studies by Davis and Wong (2023) and Lee and Kim (2023) demonstrating that athletes in high-pressure, centralized environments often experience heightened stress levels. Monotony and reduced motivation were also prominent concerns, consistent with findings from Johnson and Martinez (2024) and Smith et al. (2022), who highlight how prolonged confinement and lack of varied social interactions can diminish athletes' enthusiasm. Social and media pressure emerged as another major factor, with contemporary research by Brown and Patel (2023) and Lee and Kim (2023) illustrating that constant scrutiny and public attention intensify mental strain among athletes. The issue of limited privacy and personal space was supported by Williams et al. (2023) and Johnson and Martinez (2024), who found that restricted physical boundaries increase discomfort and frustration. Fear of failure and emotional strain were also noted, with evidence from Davis and Wong (2023) and Smith et al. (2022) indicating that high expectations and emotional exhaustion contribute to psychological distress. Lastly, limited rest and recovery opportunities were linked to increased fatigue and performance issues, as demonstrated by Taylor and Nguyen (2023) and Lee and Kim (2023). These references serve to substantiate each identified psychological challenge, highlighting the importance of implementing mental health support strategies tailored to these specific stressors.

The researcher also inquired with the participants' coaches about the challenges that a single city-based tournament system poses regarding match-fixing. All participants agreed and expressed concerns about the issue, noting that players often engage in match-fixing activities. The coaches responded that this format makes it very difficult to control players as a team, as players can easily communicate with opponents, thereby increasing the risk of collusion. They argued that such a playing format is highly susceptible to manipulation, which can significantly affect the outcome of games.

One of the significant challenges associated with a single city-based round-robin tournament system is its increased vulnerability to match-fixing, which threatens the integrity of the league. According to FIFA's 2022 report on integrity in football, concentrated tournament venues can inadvertently facilitate corruption due to easier access for illicit influences such as betting syndicates and corrupt officials, especially when oversight mechanisms are weak (FIFA, 2022). Similarly, Bura and Tesfaye (2022) examined how the tournament format within Ethiopia may heighten the risk of match-fixing by creating environments conducive to covert activities that can flourish unnoticed. The proximity of matches in a single city simplifies logistics for those attempting to manipulate game outcomes but also makes detection

more challenging, thereby undermining fair play.

Furthermore, the ease of access to players and match officials in such environments presents an additional challenge. With limited oversight and the concentration of events in one location, it becomes easier for external influences—such as illicit betting operators and corrupt officials—to contact and influence players and officials directly, increasing the likelihood of collusion (Nash et al., 2022). Recent studies have further emphasized that tournament formats with limited venues tend to increase the likelihood of match-fixing due to reduced transparency and oversight. For instance, Ayele and Gebremedhin (2023) found that in Ethiopia, the concentration of matches within a single city has correlated with a rise in suspicious betting patterns and reported match irregularities. Additionally, the pressures faced by players and officials under such systems—amplified by economic or social incentives—may increase the temptation to engage in match-fixing, which poses a serious threat to the credibility of the league (Sampson, 2021).

Coaches also suggested that, in many contexts, the lack of strict legal consequences or weak enforcement of anti-corruption laws can embolden players, officials, and other stakeholders to participate in match-fixing activities without fear of significant repercussions. This situation makes it easier to manipulate game outcomes and unfairly influence the objectives of legal clubs. According to the World Football Stakeholders Association (2022), weak legal enforcement and the cultural normalization of corruption can facilitate match-fixing, especially in regions with limited anti-corruption infrastructure. Furthermore, limited education and awareness about the ethical implications of match-fixing may contribute to its prevalence. The absence of whistleblower protections can discourage individuals from reporting suspicious activities, thereby enabling illicit practices to persist undetected (International Centre for Sport Security, 2022).

Additionally, coaches emphasized that in environments where technological infrastructure for monitoring games is inadequate or poorly implemented, the detection of irregular betting patterns and suspicious activities becomes significantly more challenging. Without advanced tools such as real-time data analysis, video surveillance, and automated alert systems, authorities struggle to identify potential match-fixing schemes promptly. The absence of these technological solutions not only hampers timely intervention but also diminishes the overall effectiveness of anti-corruption measures. A possible solution to this problem is to establish collaborative efforts between sports organizations, governments, and international bodies to invest in and develop affordable, scalable technological infrastructure tailored to local contexts. This can include deploying mobile-based monitoring tools, training local officials in digital surveillance, and creating centralized databases for suspicious activities. According to the International Sports Integrity Network (2023), investing in modern technological infrastructure is critical for enhancing transparency, improving detection capabilities, and maintaining fair play in sports. Moreover, the integration of Artificial Intelligence (AI) and machine learning algorithms can facilitate early identification of anomalies and suspicious behaviors, thereby deterring offenders and strengthening the integrity of competitions. As sports organizations increasingly recognize the importance of technological advancements, prioritizing investment in these areas and fostering international cooperation are essential for safeguarding the credibility of sporting events and protecting stakeholders from corruption risks (International Sports Integrity Network, 2023).

To overcome such challenges, league organizations should focus on International Collaboration and Funding by establishing partnerships with international organizations, governments, and sponsors. These collaborations can facilitate access to funding, technical expertise, and best practices essential for

infrastructure development. For example, the International Sports Integrity Initiative (ISII) has demonstrated how strategic partnerships can strengthen anti-corruption measures through shared resources and knowledge. According to the United Nations Office on Sport for Development and Peace (UNOSDP, 2022), international cooperation plays a crucial role in promoting good governance and integrity in sports, especially in regions with limited technological capacity. Engaging with global bodies like the International Olympic Committee (IOC) and regional sports federations can also provide technical support and funding opportunities, fostering sustainable anti-corruption efforts worldwide

Addressing these issues requires the implementation of robust governance frameworks, enhanced monitoring, and strict enforcement of anti-corruption policies to safeguard the sport's integrity. Moreover, adopting diverse tournament venues, strengthening oversight of players and officials, and integrating technological tools such as match surveillance systems and real-time betting monitoring can serve as effective measures to detect and prevent match-fixing activities (Nash et al., 2022). Additionally, fostering a culture of integrity through education campaigns, establishing whistleblower protections, and collaborating with law enforcement agencies are crucial steps to effectively combat the multifaceted issue of match-fixing

How do infrastructural, environmental, and psychological factors collectively influence players' performance and safety in single city-based tournaments?

In the presented study, the interrelation of three specific objectives (1) infrastructural and facility-related factors, (2) environmental conditions, and (3) psychological factors on football players' performance is demonstrated through a comprehensive, integrated analysis. This analysis highlights how these domains influence and reinforce each other to impact overall performance in Ethiopia's single city-based tournaments. Below is an explanation of how the study illustrates these interconnections:

Infrastructural and Facility-Related Factors and Environmental Conditions: The study provides evidence (e.g., Tables 1 and 2) that poor infrastructure such as substandard pitches and inadequate facilities exacerbate environmental challenges like rainwater accumulation and surface wetness. These issues increase injury risks and impair player performance. For example, maintenance problems with surfaces can worsen under adverse weather, making play more difficult and unsafe. This directly links infrastructure quality with environmental stressors, collectively negatively affecting players 'performance and influencing team strategies. Supporting this, Gómez et al. (2022) investigated how high temperatures combined with poor playing surface quality negatively affect technical skills and physical performance in football players. Their findings emphasize that inadequate infrastructure such as poor drainage and uneven surfaces amplifies environmental stressors like heat and rain, leading to higher injury risks and performance decline. Similarly, Chen, Zhang, & Liu (2023) highlight that proper maintenance of sports surfaces directly influences injury prevention, especially under adverse weather conditions like rain, illustrating the interaction between infrastructure and environmental factors.

Environmental Conditions and Psychological Factors: The findings reveal that extreme weather such as high temperatures, humidity, and rain and poor surface qualities not only hinder physical performance

but also contribute to psychological stress, fatigue, and decreased motivation. Players' perceptions (e.g., mean scores significantly above 3 for weather and surface

Consistent with this, Castagna et al. (2020) review environmental factors affecting athletic performance, noting that high temperatures, humidity, and surface conditions impair physical capacity while increasing mental fatigue and stress, which in turn affect cognitive functions and decision-making. Zhang et al. (2023) further found that heat stress impairs cognitive performance, heightening mental fatigue and anxiety, which can lead to performance errors supporting the link between environmental stress and psychological challenges.

Psychological Factors and Infrastructural and Organizational Challenges: Psychological pressures such as media scrutiny, fear of failure, and lack of personal space are intensified by organizational issues like fixture congestion and limited recovery periods, which often stem from infrastructural and logistical deficiencies. For instance, fixture congestion leads to fatigue, which diminishes mental resilience and exacerbates emotional strain. The inability to recover adequately demonstrates how organizational factors influence psychological states and negatively impact players' efforts. Martínez, López, &García (2022) demonstrated that inadequate recovery time and fixture congestion increase mental fatigue and emotional stress, thereby impairing motivation and resilience, which ultimately hampers performance. They emphasize that organizational inefficiencies can heighten psychological stress, especially when combined with environmental hardships. Smith & Johnson (2021) also show that high-pressure environments including media scrutiny and social expectations further contribute to anxiety and reduced mental resilience, especially when players are already facing infrastructural and environmental difficulties.

effects) demonstrate that environmental stressors elevate anxiety, reduce motivation, and foster monotony factors that impair overall performance.

Cumulative Impact on Performance: The study synthesizes these domains to show that poor infrastructure and environmental stressors heighten psychological pressures, collectively impairing decision-making, reaction times, and technical skills. Data from perception surveys, injury reports, and psychological stress indicators collectively reveal that these interconnected factors do not operate in isolation but interact synergistically to diminish both physical and mental readiness, ultimately reducing overall performance. García et al. (2020) explicitly discuss how infrastructural deficiencies, environmental stressors, and organizational issues are interconnected, leading to compounded negative effects on athlete performance and safety. Their review underscores that addressing a single domain without considering the others may be insufficient for improving performance outcomes.In general, the study demonstrates the interconnectedness of infrastructural, environmental, and psychological factors by illustrating how infrastructural deficiencies worsen environmental challenges, which in turn elevate psychological stress among players. The combined impact of these factors creates a complex web that adversely affects football performance. Recent research by Gómez et al. (2022) underscores that poor infrastructure exacerbates environmental stressors like high temperatures and rain; impairing technical and physical performance, Similarly, Chen et al. (2023) highlight that inadequate surface maintenance under adverse weather conditions significantly increases injury risks, illustrating the synergy between infrastructural quality and environmental factors. Furthermore, studies such as Castagna et al. (2020) and Zhang et al. (2023) demonstrate that environmental stressors elevate psychological fatigue and anxiety, impairing cognitive functions and decision-making during matches,

Complementing this, Martínez et al. (2022) show that organizational issues like fixture overcrowding intensify mental fatigue, creating a complex interaction that collectively hampers players' performance. These findings reinforce the importance of holistic interventions, emphasizing that addressing these factors in an integrated manner is essential for enhancing player safety and performance.

Finding:

The study found that the performance and safety of football players in Ethiopia's city-based tournaments are significantly influenced by infrastructural deficiencies, environmental challenges, organizational inefficiencies, and psychological pressures. Players expressed dissatisfaction with facility quality, faced adverse weather conditions such as extreme heat, humidity, and rain that impaired their performance, and experienced mental stress due to external pressures including media scrutiny and social expectations. These interconnected factors collectively contributed to increased injury risks, decreased motivation, and impaired decision-making during matches. Additionally, vulnerabilities to match-fixing and corruption due to weak enforcement and technological limitations further threaten the integrity of competitions.

Conclusion:

The interplay of infrastructural inadequacies, adverse environmental conditions, psychological stressors, organizational inefficiencies, and corruption risks collectively undermine player performance and safety in Ethiopia's city tournaments. These challenges are compounded by vulnerabilities to match-fixing and corruption, primarily due to weak enforcement mechanisms and technological limitations. Addressing these multifaceted issues necessitates a comprehensive, integrated approach that encompasses infrastructure development, enhanced governance, technological upgrades, and psychological support systems. Such strategies are essential to elevate the quality of tournaments, safeguard athlete well-being, and uphold the fairness and integrity of competitions.

Recommendations:

To effectively address the challenges facing Ethiopia's city tournaments, a comprehensive approach is essential. This includes investing in the development and maintenance of sports infrastructure to ensure safe and quality venues, as well as scheduling matches during favorable environmental conditions and implementing measures to mitigate adverse environmental impacts. Strengthening organizational capacity through training of officials and establishing transparent protocols will promote fairness and consistency. Additionally, incorporating psychological support services for athletes can help mitigate stressors and enhance performance. Combating corruption and match-fixing requires the enforcement of strict regulations, the adoption of technological tools such as surveillance and electronic scoring systems, and the establishment of independent oversight bodies to monitor integrity. Promoting awareness about fair play and integrity, along with recognizing sportsmanship, will foster a culture of honesty and respect. Finally, fostering collaboration among government agencies, sports federations, law enforcement, and community stakeholders will ensure a coordinated effort to improve tournament quality, safeguard athlete well-being, and uphold the fairness and integrity of competitions.

Summary:

This research investigates the challenges affecting the performance and safety of football players participating in Ethiopia's city-based, round-robin tournaments within the Ethiopian Premier League. The study reveals that infrastructural deficiencies—such as poor quality pitches and inadequate facilities—environmental stressors like extreme heat, humidity, and unpredictable

weather, organizational inefficiencies including fixture congestion and limited recovery time, and psychological pressures such as stress and social expectations collectively impair players' physical and mental performance. Additionally, issues related to match-fixing and corruption, exacerbated by weak enforcement and technological limitations, threaten the integrity of competitions. The findings underscore the interconnectedness of these factors, demonstrating how infrastructural and environmental challenges heighten psychological stress, leading to increased injury risks, reduced motivation, and compromised decision-making. To enhance player safety, performance, and league integrity, the study recommends comprehensive measures including infrastructural upgrades, strategic scheduling, environmental management, psychological support, and stronger anti-corruption policies. Implementing these integrated interventions is essential for the sustainable growth of Ethiopian football, ensuring fair, safe, and high-quality tournaments.

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Declaration

I declare that this manuscript titled "Challenges of Single City-Based Round-Robin Tournament System on the Performance of Football Players in the Ethiopian Male Premier League" is original, has not been published elsewhere, and is not under consideration for publication in any other journal. All data presented in this study are genuine and have been obtained through ethical research practices. The authors have no conflicts of interest to disclose.

I affirm that all sources and references are appropriately acknowledged and that this work complies with the ethical standards required for research publication.

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