

From Games to Gatherings: Unveiling Multifunctional Stadium Architecture

Prashant Thapa ^a, Inu Pradhan Salike ^b

^{a, b} Department of Architecture, Pulchowk Campus, IOE, Tribhuvan University, Nepal

✉ ^a mprsnarc@gmail.com

Abstract

This article delves into the realm of football stadium development in Nepal, seeking to unravel the multifaceted perceptions of stadium users. In a country like Nepal, where football is a passion and an emerging industry, understanding the dynamics that shape the user experience within stadiums is very important. Through in-depth interviews conducted during live football matches, this research captures the essence of user opinions. The findings illuminate critical aspects, such as the preference for football-specific stadiums over multi-functional ones, emphasizing the role of the former in player development. Cleanliness, seating comfort, accessibility, and amenities emerge as essential variables, influencing user perceptions. Beyond infrastructure, safety, and spectator comfort, stakeholders call for robust investment in football training facilities. This study's insights serve as a compass for architects and policymakers, guiding the design and development of stadiums that transcend bricks and mortar, becoming beacons of hope, progress, and footballing dreams. In Nepal's footballing odyssey, these stadiums beckon as stages for heroes, unifiers of communities, and symbols of unity and innovation. In the grand tapestry of sporting evolution, they represent the synergy of grandeur and grassroots growth.

Keywords

Football, multi-purpose stadium, specialized facilities, user perception, experiences

1. Introduction

Football, one of the beautiful games, has long been a universal language that transcends borders, cultures, and generations. It's more than just a sport; it's a shared passion that brings communities together [1]. The term "beautiful game" used to describe football encapsulates a subjective appreciation for the sport's aesthetic qualities, grace, and emotional impact. The beauty in football is often attributed to the fluidity of play, intricate skill maneuvers, teamwork, and the sheer joy and passion it ignites among players and fans alike. The term goes beyond literal aesthetics; it encompasses the captivating moments, the unpredictable nature of the game, and the shared emotions it elicits. In essence, "beautiful" in this context is a metaphorical expression that captures the artistry, excitement, and communal experience that make football a source of inspiration and admiration for millions around the world.

The very definition of football reflects its essence - a game played between two teams, with the simple objective of getting the ball into the opponent's goal. Yet, football is far from simple; it's a complex dance of strategy, skill, and unbridled enthusiasm [2].

Playing football isn't just a pastime; it's a path to improved cardiovascular health, increased stamina, and strengthened muscles. It's a symphony of movements, from running and sprinting to kicking and diving. Football isn't just a game; it's an active endeavor that challenges both body and mind.

In this vibrant world of football, stadiums emerge as sacred temples where these challenges are faced, victories are celebrated, and bonds are forged. Stadiums, traditionally

defined as large sports grounds surrounded by rows of seats, have evolved into more than mere playing fields. They are now architectural wonders, embodying the dreams, hopes, and fervor of countless fans and players [3].

In the shadow of these massive structures, communities come together, celebrating the spirit of competition, unity, and shared joy. Yet, the evolution of stadiums has transcended their role as the exclusive domain of football [4]. Enter the era of multi-purpose stadiums, a concept that defies the traditional boundaries of sports venues. These architectural marvels are designed with versatility in mind, accommodating not just football but a myriad of events and activities. They become the heart of a community, where the spirit of unity extends beyond the football pitch [5].

But why the shift toward multi-functionality? As our global population soars, our natural resources dwindle. The usable land is decreasing, and land values are soaring. Architects and planners are challenged to find sustainable solutions that maximize the utility of every square foot. Multi-purpose stadiums are a response to this challenge, sharing resources and offering diverse activities under a single roof [6].

During this expedition, the primary mission is to unravel the necessity of multi-functional stadiums. To achieve this by closely examining the perspectives of various key players in the stadium ecosystem, including spectators, players, stakeholders, and media personnel. Our objective is clear: to delve into the thoughts and opinions of these individuals regarding the importance and advantages of multi-functional stadiums compared to their single-purpose counterparts.

In this quest to understand the dynamics of stadium functionality, the author will embark on a comprehensive

exploration of the viewpoints held by these integral stakeholders. By gathering insights from a diverse range of individuals who interact with stadiums, to gain a holistic understanding of the perception of the people towards multi-functional stadiums.

2. Methodology

Qualitative analysis method is used to draw the perception of users in a stadium, to interpret the importance of the multi-functional and specific football stadiums in the country. The research is based on case study approach. The methods that has been used in this research to collect data are through literature review, case studies and open coded interview surveys. The ontological assumption of this research that there's no single reality or truth, but rather multiple realities. The epistemology of the research suggest that the knowledge can be interpreted. Hence the research falls under the constructivist paradigm.

3. Literature Review

Football can be defined as any of several games played between two teams on a usually rectangular field having goalposts or goals at each end and whose object is to get the ball over a goal line, into a goal, or between goalposts by running, passing, or kicking [2].

Football stadium means a stadium that is principally used as the home stadium of a professional football team, "foot- ball stadium" means a stadium that includes the site of a proposed home stadium of such a team [7].

A multi-purpose stadium can be referred as a type of stadium designed so that it can be easily used by multiple types of events. While any stadium could potentially accommodate more than one type of sport or event, this concept usually refers to a specific design philosophy that stresses multi-functionality over specificity [8].

Stadiums are no longer the singular-purpose structures they once were; they have emerged as dynamic, multifunctional spaces that extend beyond traditional sports events. This transformation has not only redefined the way we perceive stadiums but has also influenced urban planning, community development, and the overall sports experience [9].

3.1 Evolving Role of Stadiums

Stadiums were historically built primarily to host sporting events and act as the battlegrounds for athletic competitions. However, this role has evolved significantly. Today, stadiums have role of key players in urban regeneration, altering cityscapes as well as contributing to local economies. Stadiums have now, expanded into hosting various events, including music concerts, business conferences, and cultural exhibitions; They are no longer limited to their primary function only [5].

3.2 Football people and city

Football plays a profound role in connecting people with their cities, and this connection extends to the architectural landscape. Football stadiums become iconic landmarks, representing the collective identity and spirit of a city. These structures go beyond being mere venues; they are cultural hubs where communities gather, celebrate, and express their shared passion for the game. The design and location of football stadiums contribute to the urban fabric, shaping the city's identity and providing a sense of pride for its residents. The architecture of these stadiums, therefore, becomes a reflection of the city's character and a symbol of the integral bond between football, people, and the urban environment.

3.3 Stadiums as Urban Icons and Multi-Functional Spaces

Stadiums have outgrown their utilitarian roles, evolving into iconic landmarks that shape city skylines. These architectural wonders not only host sporting events but also play an important role in urban revitalization when integrated with mixed-use developments. They have become experiences rather than merely being structures. The importance of stadiums goes beyond their physical presence; it hinges on the emotional experience they provide for both fans and players. The goodness of a stadium is often measured by the emotions it invokes during events [10].

3.4 Stadiums shaping the urban landscape

In the urban landscape, stadiums emerge as architectural masterpieces, contributing significantly to a city's character and identity. Sketches of these structures can highlight their seamless integration into the urban fabric, showcasing how their design complements and enhances the surrounding environment. Transportation linkages, depicted in the sketches, emphasize the stadium's connectivity to the broader city network, underlining its role as a central hub for events and activities.



Figure 1: Hypothetical stadium site at Kansas (source: Kansas Business Journal)

Mixed-use developments depicted around the stadium illustrate how these structures stimulate economic activity, providing spaces for commerce, entertainment, and social interaction. Green spaces and public areas, as portrayed in the

sketches, demonstrate the stadium's contribution to the creation of vibrant community spaces that extend beyond game days. Illuminated night sketches capture the stadium's transformative effect on the city's nighttime ambiance, turning it into a captivating focal point. Lastly, the sketches should convey the stadium's integration into the local community, fostering a sense of belonging and providing a venue for various community events. Through these sketches, the dynamic relationship between stadiums and urban areas comes to life, illustrating the positive impact on the city's aesthetics and the community's social and economic vitality.

3.5 The Versatility of Multi-Functional Stadiums

A paradigm shift in stadium design can be seen in contemporary multi-functional stadiums. They offer flexibility for hosting diverse events, ranging from sports and entertainment to conferences, offices, and even residential accommodations [9]. The revenue challenge for stadiums spans their long lifespans, typically 30-50 years. To address this challenge, multi-functional stadiums are being designed to accommodate various activities beyond match days, reducing the risk of underutilization.

3.6 Enhancing the Fan Experience

Modern stadiums emphasize enhancing the fan experience. Initiatives such as minimizing crowding, encouraging fans to arrive early and stay after events, and increasing revenue generation have become unexceptional. Also, incorporating elements such as live video broadcasts, access to club stores, and stadium tours enhances the holistic fan experience [9].

3.7 Challenges of Overinvestment

Multi-functionality is appealing but it also exhibits challenges such as higher capital costs, storage accommodations, and access to large vehicles. Careful cost-benefit analysis is essential when considering features like retractable roofs. Modular and temporary stadium construction can also be explored to prevent underutilization [9].

3.8 The Cultural Significance of Stadiums

Stadiums hold cultural significance beyond sports. They are venues for music concerts, corporate events, and religious gatherings. Football stadiums, in particular, are revered as cultural spaces and even serve as battlegrounds, reflecting their historical and political importance [4].

3.9 Spectator Satisfaction and Service Interfaces

One of the critical aspect of multi-purpose stadiums' success is visitor satisfaction. Studies have indicated that factors like stadium accessibility, interior design, and the atmosphere of events significantly influence visitor satisfaction. Visitor experiences can be improved by understanding and enhancing these service interfaces. [5].

3.10 Case studies

The Shree Shiv Chhatrapati Sports Complex in Balewadi, Pune, India, is a shining example of a multi-functional sports

complex. It was originally built in 1994 for the National Games and has since evolved into a hub for various sporting events and activities. Such multi-purpose stadiums are instrumental in promoting sports, hosting diverse events, and catering to a wide range of sports enthusiasts and athletes [11]



Figure 2: Chyasal Stadium

The Tottenham Hotspur Stadium in London, designed by Populous, is a prime example of a stadium that seamlessly blends sports and multi-functionality. What sets it apart is its innovative retractable football pitch, divided into three sections, which can reveal a synthetic turf beneath. This groundbreaking feature allows the stadium to host a variety of events, including NFL games and music concerts, all while preserving the quality of the playing surface. With a seating capacity of 62,000, expandable for music events, this stadium demonstrates how modern stadiums are evolving to cater to diverse entertainment needs while maintaining top-notch playing conditions for athletes [12].

3.11 Variables

There are some of the variables that are directly involved in the success of the stadium as a multi-functional stadium which are:

- Accessibility (transportation and traffic)
- Exterior of the stadium 'availability of security services' and 'appearance of the stadium'
- Interior of the stadium 'atmosphere in the stadium' (functions)
- Food and beverages (cleanliness)
- Events 'atmosphere of the event'

4. Limitation

This research is poised to offer valuable insights into the perceptions of users within football stadiums i.e. Dasarath Rangasala and Chyasal Stadium, it's important to acknowledge its limitations as this study primarily revolves around understanding the user's perspective (Football Fans) within football stadiums, and as such, it doesn't encompass the perceptions of other sports users and fans (for

multi-function) and also doesn't hold a comprehensive analysis of stadium design and functionality.

5. Data Collection

The survey took place at Chyasaal Stadium on March 9th, 2023, and Dasarath Rangasala on March 11th, 2023, with meticulous attention to authenticity. To ensure the data's credibility, the researcher personally attended the football matches in these stadiums, conducting open-ended, non-structured questionnaire surveys. Each interview had an average duration of approximately 12 minutes and was conducted while the respondents were engrossed in watching the football game. The data collected is firsthand and specifically focused on users' perceptions of the stadium's functionality and other relevant aspects. In total, 13 interviews were conducted, with 6 at Chyasaal Stadium and 6 at Dasarath Rangasala. Notably, the Vice President of the Lalitpur Federation was interviewed at his residence, while two interviewees provided insights in both stadiums, contributing to a comprehensive understanding of their perspectives.



Figure 3: Interviewing

stadiums are important for hosting mega events, but they should not be the only focus of sports infrastructure development in the country. The interviewees also highlighted the need for proper management and maintenance of sports facilities, especially in terms of cleanliness and hygiene. Overall, the overarching theme is that Nepal needs to invest more in its sports sector, with a focus on building dedicated football facilities and promoting better training and development of players.

The variables that can affect a user's perception of a football stadium obtained from the interviews:

- Quality and condition of the playing surface
- Design and architecture of the stadium
- Seating arrangements and comfort
- Availability of amenities (e.g. restrooms, concessions, parking, etc.)
- Cleanliness and maintenance of the stadium and its surroundings
- Acoustics and sound quality
- Lighting quality for day and night games
- Accessibility and ease of transportation to the stadium
- Safety and security measures in place
- Weather conditions during the game
- The type of events hosted at the stadium (e.g. football games, concerts, other sports events, etc.)
- Overall atmosphere and fan experience

6. Data Discussion and Analysis

The purpose of this research was to study the user perception of the stadiums. There is a need for more football-oriented stadiums and better sports facilities in Nepal. The interviewees emphasized the importance of having dedicated football fields and training facilities for players to improve their skills and potential. They believe that multi-functional



Figure 5: Dasarath Rangasala

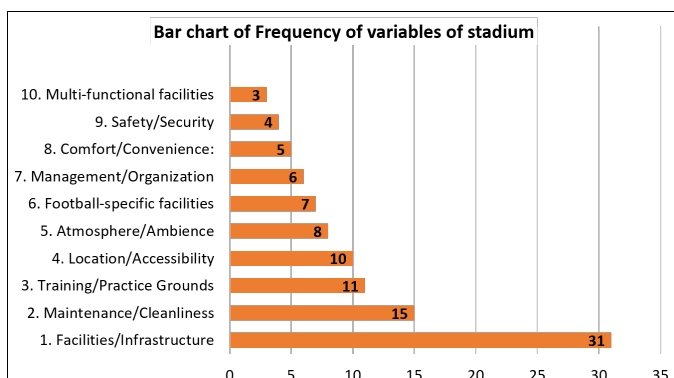


Figure 4: Bar chart showing stadium variables



Figure 6: Word Cloud

The bar chart of frequency of variables of a stadium shows that the facilities and infrastructures of a stadium greatly affects the perception of the users. And the management of the stadium is also another important factor along with the cleanliness of it. Training and practice grounds also plays vital role for the players. The accessibility and location are frequent variables coming.

The interviewees gave some of the important points on the different variables:

• Stadium size and capacity:

Mr. Gurung stated that the Dasarath Rangasala stadium needs to be improved to meet international standards and Chyasal Stadium can be a sweet place for football events if managed properly.

Mr. Sajal Gmimire believed that smaller stadiums are better for domestic matches, but larger stadiums are necessary for international matches and events.

• Architecture and design:

Mr. Moktan mentioned that the design of the stadium should prioritize safety, security, and comfort for spectators.

Mr. Khadka emphasized the importance of designing stadiums with proper drainage systems to prevent waterlogging during rainy seasons.

• Playing field:

Moses, the football player from Ghana, stressed the importance of having a quality playing field for proper football games.

Mr. Thapa Magar stated that having specific football-oriented stadiums with proper management and maintenance is crucial for player training and developmentMulti-functionality:

Mr. Thapa Magar believed that multi-functional stadiums can be useful for mega events and international matches, but having specific sport facilities for football is necessary for proper training and development.

Mr. Shrestha emphasized that multi-functional stadiums can be beneficial for generating revenue through other events and activities.

• Infrastructure and amenities:

Mr. Gurung mentioned the need for proper facilities like washrooms, parking, and seating arrangements in stadiums.

Mr. Chaudhary stressed the importance of having emergency medical facilities and first aid kits available in the stadium.

• Location:

Mr. Thapa Magar suggested that a new, large-scale football stadium should be built outside of Kathmandu Valley to expand the reach of football facilities across the country.

Majority of the interviewees believed that having stadiums located in easily accessible areas with good transportation facilities can increase attendance and revenue.

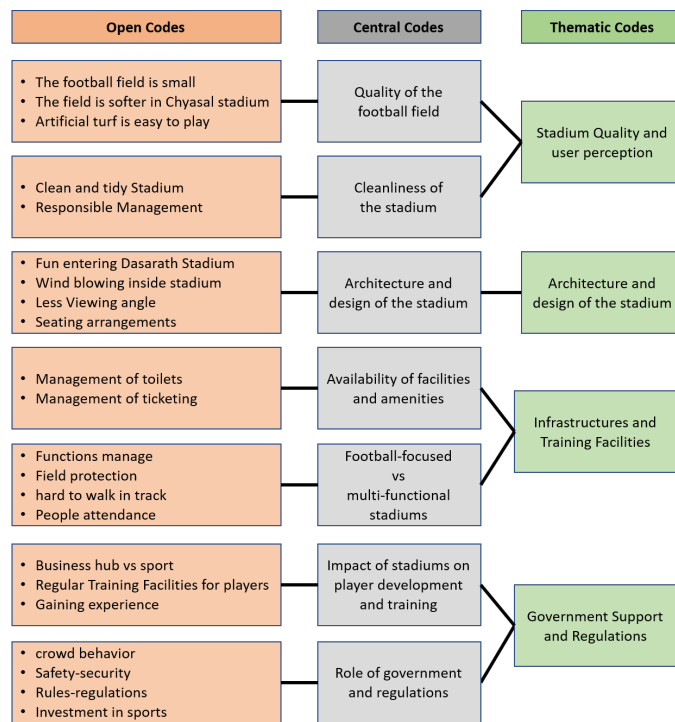


Figure 7: Codings

7. Conclusion

In this vibrant world of football, where passion and camaraderie intersect on the green fields of dreams and hope, stadiums serve as the heart of the beautiful game. The exploration into the perceptions of stadium users in Nepal has unveiled a symphony of voices, each echoing a resounding call for progress and transformation.

The love of Nepal for football is undeniable, and the desire for dedicated football sanctuaries is fervent. As the cheers and chants of fans reverberate through these hallowed arenas, it's clear that these temples of sport hold immense potential. Yet, they must evolve and are evolving, not just as multi-functional hubs for mega-events but as nurturing grounds for polishing talents and welcoming spaces for passionate sports fans.

The variables that shape these perceptions are as diverse as the colors of a different jersey. From the pristine quality of playing surfaces to the stadium's architectural embrace, from the comfort of seating to the convenience of amenities, and from the symphony of sound to the magic of well-placed lights – everything plays its part in crafting the stadium experience.

This article has uncovered the facets that matter most, it's the people who breathe life into these structures, who transform concrete and steel into cauldrons of emotion, and who ignite the flames of footballing fervor. Their voices resonate: Build better, maintain meticulously, and innovate intelligently.

To conclude this odyssey into the heart of Nepal's footballing aspirations, one truth emerges resolute – it's not just about the stadiums; it's about the dreams they house, the aspirations they inspire, and the memories they etch. The stadiums are more than structures; they are the grand stages upon which heroes are made, where communities unite, and where the very essence of togetherness is celebrated.

So, as Nepal continues its footballing journey, let the stadiums stand not just as concrete and steel, but as beacons of hope, symbols of progress, and canvases for unforgettable moments. For in these arenas, where football meets passion, and unity meets innovation, the future of Nepalese football gleams brightly, beckoning all to come, play, and dream.

In this ever-changing world of sports, the multi-purpose stadiums aim for big events and sports growth, and the single-purpose stadium focuses on developing players. These two kinds of stadiums represent what people want and think about sports venues. They combine the desire for grand events with the need to support local talent from the beginning. In the future of football, these ideas will shape how stadiums are built. They'll become places where both big dreams and small beginnings come together, creating a beautiful story of football excellence.

8. Recommendation

Recommendations for the development of stadiums in cities should be grounded in fostering widespread interest in football and addressing the specific needs of players. Firstly, there is a pressing need for dedicated football facilities in Nepal, encompassing top-tier stadiums and well-equipped training grounds. These facilities should be strategically distributed to cater to the grassroots level, fostering the development of players from an early stage. High-quality playing surfaces meeting international standards should be prioritized, as they significantly impact athlete performance. Additionally, to enhance the spectator experience and attract a broader audience, comfort and aesthetics should be central considerations in stadium design. This could involve incorporating modern amenities, creating visually appealing structures, and ensuring a fan-friendly environment. Furthermore, collaborations between sports organizations, government bodies, and private stakeholders can play a pivotal role in securing funding and expertise for comprehensive stadium development projects. By addressing these aspects, stadiums can become not only sporting venues but also community hubs that contribute to the overall growth of football in Nepal.

9. Further Study

For the deep understanding of stadium development's impact on sports and communities in Nepal, there are several avenues for further study. One of the important study is a comparative analysis between football-specific and multi-functional stadiums which should be undertaken to evaluate their respective roles in sports development and revenue generation. Exploring the intricate nuances of the user experience, including fan engagement, amenities, and safety measures, would provide valuable insights into stadium

design. International benchmarking, comparing Nepal's football stadiums with their global counterparts, can highlight areas for improvement.

Acknowledgments

This journey of exploration and research has been enriched by the contributions and support of numerous individuals and institutions. The authors extend their heartfelt gratitude to all those who have helped with the interviews and data collection process for this endeavor to success.

References

- [1] M. Twardowski, "Football Stadiums – Icons of Sports Architecture," *Czasopismo Techniczne*, vol. 11, no. October, 2018, doi: 10.4467/2353737xct.18.162.9418.
- [2] "Football Definition & Meaning - Merriam-Webster." Accessed: Jan. 30, 2023. [Online]. Available: <https://www.merriam-webster.com/dictionary/football>
- [3] "A brief history of football stadiums." Accessed: Jan. 30, 2023. [Online]. Available: <https://www.footballhistory.org/stadiums.html>
- [4] "What makes a stadium successful? | IAKS Worldwide." Accessed: Feb. 27, 2023. [Online]. Available: <https://iaks.sport/news/what-makes-stadium-successful>
- [5] C. Höck, C. M. Ringle, and M. Sarstedt, "Management of multi-purpose stadiums: Importance and performance measurement of service interfaces," *International Journal of Services, Technology and Management*, vol. 14, no. 2–3, pp. 188–207, 2010, doi: 10.1504/IJSTM.2010.034327.
- [6] "World Population Growth - Our World in Data." Accessed: Feb. 07, 2023. [Online]. Available: <https://ourworldindata.org/world-population-growth>
- [7] "Football stadium Definition | Law Insider." Accessed: Jan. 30, 2023. [Online]. Available: <https://www.lawinsider.com/dictionary/football-stadium>
- [8] "SPORT AS A TOOL FOR SOCIAL INTEGRATION: The design of a multi-purpose sporting precinct for Durban, eThekweni. BY: CRAIG KIRKPATRICK 206505179".
- [9] K. S. K. S. Advisory, V. Gerkan, M. und Partner, and M. und P. Von Gerkan, "A Blueprint for Successful Stadium Development," p. 2020, 2013.
- [10] M. E. Dymchenko, M. F. Dakoro, and D. G. Dadiyan, "The problem of form in modern architecture," *E3S Web of Conferences*, vol. 281, p. 02026, 2021, doi: 10.1051/e3sconf/202128102026.
- [11] "Shree Shiv Chhatrapati Sports Complex Stadium LED stadium lighting 120w." Accessed: Sep. 09, 2023. [Online]. Available: <https://www.mecreeled.com/shree-shiv-chhatrapati-sports-complex-stadium-led-stadium-lighting-120w/>
- [12] "Go Inside the Spectacular Tottenham Hotspur Stadium in London | Built." Accessed: Sep. 09, 2023. [Online]. Available: <https://blog.bluebeam.com/tottenham-stadium-construction-london/>