



THE UNIVERSITY
OF ARIZONA

**ENHANCING URBAN SUSTAINABILITY AND SOCIAL INCLUSION
THROUGH BASKETBALL INFRASTRUCTURE IN LIMA CENTRO**

**College of Architecture Planning & Landscape Architecture University of Arizona -
Sustainable Built Environments**

SBE 498– SENIOR CAPSTONE

Author:

Valeria Arrestegui Cahuana

Assessor:

Sandra Bernal

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I. ABSTRACT

Basketball infrastructure has the potential to address urban challenges by fostering social inclusion, sustainability, and community resilience. In Lima Centro, inadequate sports facilities, coupled with limited public spaces and social inequalities, have hindered the development of basketball as a tool for urban transformation. Currently, only 40% of Lima Basketball League teams are based in this area, reflecting disparities in resource distribution and accessibility.

This research explores how basketball infrastructure can foster sustainable urban environments and promote social inclusion. A mixed-methods approach was applied, incorporating case studies of successful initiatives in Latin America, a survey of Lima Centro residents and basketball players to assess needs and perceptions and a SWOT analysis to evaluate the internal and external factors influencing basketball infrastructure development.

The analysis revealed that well-designed basketball facilities can enhance social cohesion, stimulate local economies, and reduce environmental impact. Key factors include integrating community participation and adopting sustainable construction practices. These findings suggest that basketball courts, beyond serving as recreational spaces, can function as catalysts for broader urban revitalization.

By aligning sports infrastructure development with Sustainable Development Goals (SDGs) 10 and 11, this research provides actionable insights for urban planners and policymakers seeking to address social and environmental challenges in densely populated urban areas like Lima Centro.

Findings highlight that basketball courts, when integrated with sustainable urban planning principles, can enhance social cohesion, promote physical activity, and stimulate local economies. This research highlights the importance of accessible, inclusive, and environmentally responsible sports infrastructure as a catalyst of sustainable urban development in Lima Centro.

Keywords: sustainability, basketball, social inclusion, Lima Centro, sport spaces

II. INTRODUCTION

Basketball is a highly accessible sport that can be played almost anywhere and requires only few elements. It promotes physical activity and enhances mental focus. As a team sport, it develops valuable skills like communication, teamwork, and leadership, which are beneficial beyond the court. But despite its significant growth at national and international levels, faces challenges in Lima Centro due to inadequate facilities. Currently, only four out of ten teams in the Lima Basketball League are based in this area, revealing a contrast in the distribution of resources and opportunities for sports participation. This inequality not only shows the competitiveness of local teams but also restricts the engagement of young people who could use basketball for physical, social, and emotional development. The lack of adequate sports infrastructure directly impacts youth participation in sports, which is particularly pronounced in Lima Centro. Addressing this issue requires a comprehensive approach that integrates the development of sports facilities with sustainable urban policies to enhance community engagement and promote social inclusion through basketball. According to Barbosa and Urrea (2018), the lack of adequate sports infrastructure in urban areas has a direct impact on the reduction of youth participation in sports, and this is a problem that Lima Centro faces acutely.

Lima Centro's social context suggests a need for integrating sports infrastructure development with sustainable urban planning. Various initiatives in Latin America, such as "Barrios en Juego" in Argentina and "De Cancha en Cancha" in Chile, have shown how the rehabilitation of sports spaces can foster social cohesion, strengthen the sense of belonging and contribute to local economic development (Ibero-American Sports Council, 2019; Barbosa & Urrea, 2018). These initiatives have shown that the revitalization of public spaces through sport and urban art has positive effects on social integration and the sense of community, which could be replicated in Lima Centro, where these spaces are limited and not very accessible.

The relationship between basketball and the Sustainable Development Goals (SDGs) is also key in this analysis. Programs such as FIBA's Mini Basketball projects in Latin America have shown that sport can be aligned with sustainability goals, not only at a social level, but also at an environmental level, integrating practices such as the use of renewable energy and the reduction of environmental impact in sporting events. In Lima Centro, an improvement in sports infrastructure would not only promote the practice of basketball but would also contribute to the achievement of several SDGs, including the promotion of health and well-being (SDG 3), the reduction of inequalities (SDG 10), and the creation of sustainable and inclusive communities (SDG 11).

Sport as a tool for sustainable development

The concept of sustainability in sport has gained relevance in recent decades, with international organizations recognizing its importance. The International Olympic Committee (IOC) has been a pioneer in this regard, setting up guidelines for more environmentally friendly sporting events in its Sport and Environment Manual (International Olympic Committee, 2005). This approach lays the groundwork for considering sustainability in specific sports such as basketball, even in local contexts such as Lima Centro.

The Ibero-American Sports Council has reinforced this idea, pointing out that sport can be an effective tool to achieve the Sustainable Development Goals (SDGs) of the 2030 Agenda

(Ibero-American Sports Council, 2019). This perspective suggests that basketball could contribute significantly to broader sustainability goals. Lemke (2016) also highlights the crucial role of sport in achieving the SDGs, emphasizing its potential to promote peace, health and education.

Aspects of sustainability in sport:

Economic sustainability

Sustainable sport initiatives have the potential to generate significant economic benefits for local communities. In the context of basketball in Lima Centro, this could manifest itself in several ways. Sportmadness (2024) suggests that sustainable sport can create jobs, foster local infrastructure development, and promote sports tourism. Organizing basketball tournaments, building and maintaining sports facilities, and attracting visitors to events could contribute substantially to the local economy.

Social sustainability

The social impact of sport, and basketball in particular, is multifaceted. Barbosa and Urrea (2018), in their literature review, highlight the positive influence of physical activity on the physical and mental well-being of participants. In the context of Lima Centro, basketball could play a crucial role in promoting social inclusion, community development and improving quality of life. Basketball programs could serve as platforms for values education, prevention of social problems and fostering community cohesion.

Environmental sustainability

The organization of sustainable sporting events involves careful consideration of their environmental impact. Anesma (2024) emphasizes the importance of waste management, efficient use of resources and protection of ecosystems in the sporting context. For basketball in Lima, this could translate into the implementation of green practices in sports facilities, such as the use of renewable energy, efficient recycling systems and the promotion of sustainable transportation for spectators and participants.

Trends in sports sustainability

The field of sustainability in sport is constantly evolving. ISPO (2024) identifies five key trends that are shaping the sports industry, including the circular economy and innovation in materials. These trends could have significant implications for how basketball is practiced and organized in Lima in the future. For example, the adoption of sports equipment made from recycled materials or the implementation of circular management systems in sports facilities.

Iberdrola (2024) expands on this perspective, pointing out that sustainable sport refers not only to the sporting practice itself, but also to the responsible management of facilities and events. This is particularly relevant to the development of basketball in Lima Centro, where the planning and execution of tournaments and the maintenance of courts could be aligned with sustainability principles.

A systematic review published in the journal *Apunts* (2024) examines the relationship between sporting events and sustainability, providing valuable insights that could be applied to the context of basketball in Lima. This study offers guidelines for the organization

of basketball tournaments that maximize social and economic benefits while minimizing environmental impact.

As a Sustainable Built Environments (SBE) student, it is important to show how urban sport spaces have the power to shape equitable, inclusive, and resilient communities. So, in this paper aims to enhance basketball infrastructure in Lima Centro by integrating social, economic, and environmental sustainability. Guided by the Sustainable Development Goals (SDGs), such as reducing inequalities (SDG 10) and fostering sustainable cities (SDG 11), the goal is to showcase how well-designed sports facilities can promote social cohesion, health, and sustainable urban development.

The lack of adequate sports infrastructure in Lima Centro forms a significant challenge for the development of basketball as a tool for social inclusion and the promotion of well-being. Lima Centro, being one of the most densely populated areas with a rich urban history, faces a series of social problems that include insecurity, lack of access to basic services and limited public spaces for recreation. In this context, sports, like basketball, have the potential to become a vehicle for social transformation and community revitalization. However, limitations in the area's sports infrastructure restrict its impact, especially in vulnerable sectors. This research aims to examine the relationship between sports infrastructure, particularly basketball facilities, and their potential influence on urban sustainability and social cohesion in Lima Centro.

III. METHODOLOGY

A qualitative research approach integrates a comparative analysis of successful cases in other regions of Latin America, a perception analysis via a survey of a random population regarding the impact of sport initiatives in vulnerable urban contexts and a SWOT analysis to observe Strengths, Weaknesses, Threats and Opportunities of the cases analyzed in the comparative analysis. After observing the outcomes from these methods, recommendations will be formulated for the development of public policies that integrate sport with sustainable urban planning strategies.

RESEARCH QUESTION

How can an adequate sports infrastructure, especially basketball, foster a sustainable urban environment and social inclusion in Lima Centro?

By answering the research question, it is intended that basketball in Lima Centro can become a key tool not only for sports development, but also for the social and urban revitalization of the community. In addition, surveys were conducted to determine the perception of players and residents of the area.

Method 1: Case Study Comparative Analysis

This method was chosen because it was essential to examine real-world examples of how well-maintained sports infrastructure can foster both physical development and social cohesion in communities. By studying similar cases in Latin American cities with social and economic contexts comparable to Lima, it is possible to draw valuable lessons on how to approach the infrastructure challenges in Lima Centro. By analyzing cases from other cities, we can:

- Identify best practices in sports infrastructure development.

- Understand the social impacts of these projects (e.g., community cohesion, youth engagement).
- Assess their sustainability contributions in terms of social, economic, and environmental benefits.

In the context of Lima centro, where inadequate basketball infrastructure limits community engagement, studying these successful projects provides a framework for how similar initiatives could be implemented locally.

It is selected case studies from Latin American cities that share similar socio-economic challenges with Lima. These cities, like Lima centro, face issues such as urban inequality, limited public spaces, and underfunded sports programs. The chosen examples include:

1. Barrios en Juego in Buenos Aires, Argentina: A project focused on renovating sports facilities in marginalized neighborhoods with strong community involvement.
2. De Cancha en Cancha in Chile: A program that integrates urban art and sports to revitalize neglected public spaces.
3. Mini Basketball by FIBA: A regional initiative aimed at promoting basketball in disadvantaged communities across Latin America, focusing on youth leadership and inclusion.
4. NBA Basketball School Latin America: A developmental program created by the NBA to promote basketball skills among young players in different cities across Latin America, offering training for boys and girls, focusing on fundamental skills, physical conditioning, and overall basketball education.

To compare these case studies, it is used specific indicators to measure both the benefit and consequences of the projects:

1. Social Cohesion: Evaluated by looking at community participation rates, the reduction of social problems (like crime), and how these projects have strengthened the sense of belonging and inclusion.
2. Economic Impact: Measured by job creation (e.g., maintenance of sports facilities), increased local economic activity during sports events, and any tourism generated by the facilities.
3. Environmental Sustainability: Assessed how well these projects incorporated sustainable practices, such as waste management, energy efficiency, and environmental education.

By analyzing these case studies, aimed to see how similar strategies could be applied to Lima Centro. Each case demonstrated the significant role that improved infrastructure plays in social and economic revitalization. This method allowed to draw clear comparisons between what worked in other cities and what might work in Lima, highlighting key success factors such as community participation, long-term maintenance plans, and integration with urban sustainability goals.

Method 2: Perception analysis

The perception survey is selected as it offers a direct and anonymous way to gather opinions, preferences, and perceptions from key stakeholders—basketball players,

residents, and users of sports facilities in Lima centro. This method is particularly useful because it allowed for the collection of diverse perspectives efficiently, as the survey was easy to distribute online and ensured privacy for respondents.

The goal of this survey is to understand how local communities perceive the state of basketball infrastructure in Lima Centro. Specifically, the survey sought to gather insights on:

- The quality of existing facilities (e.g., condition, accessibility, safety).
- Community satisfaction with the availability and maintenance of basketball courts.
- Suggestions for improvement including any preferences for sustainable features in new infrastructure.

The survey is designed to include respondents from a wide range of backgrounds. Key considerations included:

- Diverse demographics: Respondents of different genders, ages, and from various districts in Lima were targeted to ensure a broad and inclusive sample.
- Inclusive feedback: The survey was structured to capture all types of opinions—both positive and negative—about the state of sports facilities. This inclusivity ensured that the analysis would reflect the full spectrum of community needs and preferences.

Using a survey is ideal because it allowed for anonymous participation, ensuring that respondents felt comfortable sharing honest opinions without fear of judgment. The survey's digital format also made it easy to distribute, ensuring widespread participation from different parts of Lima.

The survey methodology collected quantitative and qualitative data about community perspectives on basketball infrastructure in Lima Centro. By gathering insights from diverse demographic groups, the research systematically captured residents' opinions on existing sports facilities, their preferences, and potential improvement areas. This approach enabled a comprehensive understanding of local needs, providing empirical evidence to guide future sports infrastructure design and development strategies.

Questions of the survey:

DEMOGRAPHY:

Age group:

- 6-17
- 18-29
- 30-49
- 50+

This question helps to differentiate the age groups that fill out the survey, showing which group has more interest in the objective of this research.

Gender:

- Male
- Female
- Other

- I prefer not to answer.

This question is asked in order to later find out the social differences in access to sports spaces based on gender inequality.

RESIDENCE AND SPORTS PARTICIPATION

Are you a neighbor of Lima Centro?

- Yes
- No
- I used to live there but no anymore.
- I do not live there but my job or business is in the area.

This question helps to identify those who live in the research area but also shows those who have some other relationship in the area.

Are you a regular basketball player?

- Yes
- no
- occasionally
- I used to play.
- Not but I like watching my neighbors play.
- No but I support sports

This question helps categorize respondents based on their level of engagement with basketball or sports in general, allowing for analysis of how perceptions differ between players and non-players.

Questions for Basketball player:

SPORTS FACILITY PREFERENCES

Do you prefer an exclusive basketball or multi-sport sports space?

- Basketball court exclusively
- Multisport court

This question relates to the research objective by identifying the type of sport infrastructure that would best serve the sports-related people's interest.

Do you use a public or private sports facility?

- Public court
- Private court

This question divides respondents into their ability to access private courts if possible or public courts depending on their budget.

(IF IT SELECTED PRIVATE COURT)

Do you feel that there are fewer opportunities to find private courts according to your gender?

- Yes
- No

This question is asked to highlight the possibility of gender inequality in the fact of being able to find access to private basketball courts depending on gender.

ACCESSIBILITY AND CONVENIENCE

(IF IT SELECTED PRIVATE COURT)

Do you feel that the private sports space is within your budget?

- Yes
- No

This question addresses the economic aspect of sustainability by gauging the affordability of existing facilities in the area of study.

Do you prefer a sports space close to your workplace/study center or your home?

- Workplace/ study center
- Home

This question helps in understanding the optimal location for new facilities to ensure maximum accessibility and usage to the people related to a sport.

At what time do you prefer to use the sports area?

- Morning
- Afternoon
- Evening

This question helps to know the preferences for the time of use of the sports fields and in this way guarantee greater security, lighting, etc. depending on the range of preference.

During the selected time, do you feel safe when using the sports area?

- Yes
- No

This question helps to find out about the perception of safety in a preferable time range because safety is a crucial aspect of social inclusion and sustainable urban environments, so this question directly addresses this concern.

Do you find available transportation to get from your workplace/study center to the sports facility at the selected time?

- Yes
- No

This question helps to understand whether it is feasible to transport the place where they currently practice sports from their workplace or school to the sports center and thus determine certain necessary aspects such as extra security, additional lighting, etc.

What concepts will you relate to the public sport facilities below?

- Enjoyable
- Family friendly
- Very well-maintained
- Efficient
- adequate
- Inadequate
- Inefficient
- Poorly maintained
- not kid-friendly
- Risky



Figure 1. Example of poorly maintained basketball courts

This question is useful to understand sports players' perceptions of poorly maintained facilities and to find out what stands out most in their perception, whether it be safety, maintenance, fun, family-friendly, etc.

What concepts will you relate to the public sport facilities below?

- Enjoyable
- Family friendly
- Very well-maintained
- Efficient
- adequate
- Inadequate
- Inefficient
- Poorly maintained
- not kid-friendly
- Risky



Figure 2. Example of well-maintained basketball courts

This question is useful to understand sports players' perceptions of well-maintained facilities and to find out what stands out most in their perception, whether it be safety, maintenance, fun, family-friendly, etc.

(for those who selected negative words for the first question)

Would you like to see these facilities go away or be improved?

- I prefer that these facilities go away,
- I prefer that these facilities would be improved.

Why? (text)

This question is used to find out from the players who only saw negative aspects whether they would be interested in getting rid of that type of sport space or if they would rather improve it, and they can also leave the reason for their decision.

Would you support the creation of more facilities like the once in the second set of images? Or would you rather make them private?

- Yes, I would like to support the creation of more facilities like that

- No, I prefer that they were private.

This question is used to find out whether respondents are interested in having well-maintained public courts in their area or, on the contrary, they would prefer them to be private, and in this way to find out the interest in this type of public facilities.

Questions for Neighbor:

Are you interested in having a sports space in your area?

- Yes
- No

This question is asked to find out the interest of people related to the Lima Centro area in having a sports space in the area. Thus, it is possible to know if proposing a sports space would be accepted by the residents and users of the area or not beyond the active players.

If not, why?

- Noise
- traffic
- safety concerns
- disruptive behavior
- another:

This question was asked to understand the reason for the possible lack of interest of the residents and users of Lima Centro in not wanting a sports space in the area

Do you consider a sports facility near your area safe?

- Yes
- No

This question was asked to obtain the perception of residents and users of the area about whether sports spaces would be considered safe or not.

What concepts will you relate to the public sport facilities below?

- Enjoyable
- Family friendly
- Very well-maintained
- Efficient
- adequate
- Inadequate
- Inefficient
- Poorly maintained
- not kid-friendly
- Risky



Figure 2. Example of well-maintained basketball courts

This question is useful to understand non-sports players' perceptions of poorly maintained facilities and to find out what stands out most in their perception, whether

it be safety, maintenance, fun, family-friendly, etc. and find out the contrast with players' perception.

What concepts will you relate to the public sport facilities below?

- Enjoyable
- Family friendly
- Very well-maintained
- Efficient
- adequate
- Inadequate
- Inefficient
- Poorly maintained
- not kid-friendly
- Risky



Figure 1. Example of poorly maintained basketball courts

This question is useful to understand non-sports players' perceptions of well-maintained facilities and to find out what stands out most in their perception, whether it be safety, maintenance, fun, family-friendly, etc. and find out the contrast with players' perception.

Method 3: SWOT

The SWOT analysis was conducted to evaluate the internal and external factors influencing basketball infrastructure development. This method synthesized data from the comparative case studies in Method 1 to provide a structured framework for identifying strengths, weaknesses, opportunities, and threats associated with similar projects.

Through this approach, strengths and weaknesses were assessed as internal factors, focusing on project design, community engagement, and resource allocation. Opportunities and threats were identified as external factors, considering broader socio-economic, environmental, and policy contexts.

SWOT was chosen to:

- Objectively assess the positive and negative factors influencing sports infrastructure.
- Identify actionable opportunities (such as partnerships or public policies).
- Understand external threats (like economic instability or competition from other sports).

The SWOT analysis is valuable in this context because it organizes insights into:

- Strengths: Community interest and participation in basketball.
- Weaknesses: Lack of funding and inadequate sports facilities.
- Opportunities: Potential partnerships with organizations promoting sustainability.
- Threats: Economic instability and competition with more popular sports, such as soccer.

This strategic analysis identified key areas for improving basketball infrastructure in Lima Centro and provided recommendations for more sustainable and socially inclusive development.

IV. RESULTS and ANALYSIS:

Method 1 results: Case Study Comparative Analysis

In this method, various sports infrastructure programs across Latin America were explored, focusing on their pros, cons, and their relationship to sustainability goals. This comparative approach helps to identify effective practices that could be adapted to address the lack of basketball infrastructure in Lima Centro, utilizing the sport as a tool for social cohesion and urban sustainability. The findings are presented below, organized by the pros and cons of each program and their contributions to sustainability.

Social Cohesion: Pros and Cons

In terms of social cohesion, programs such as Barrios end Juego in Buenos Aires and De Cancha end Cancha in Santiago, Chile, successfully strengthened community bonds and promoted social inclusion through active community participation in the design, renovation, and maintenance of sports facilities. This has improved safety and fostered a sense of belonging within communities. A key benefit is that the community itself assumes responsibility for these spaces, reducing vandalism and enhancing local coexistence.



Figure 3. Picture of Barrios en Juego project.



Figure 4. Picture of De cancha en cancha project.

However, a significant challenge is the dependence of these projects on active community participation for their sustainability. In Barrios end Juego, limited long-term resources and the voluntary nature of community involvement are constraints; without this support, the initiative loses impact and viability.

For Lima Centro, a similar approach to citizen participation could be replicated to address security issues and strengthen the social fabric, though long-term support measures must be in place to ensure project sustainability beyond voluntary involvement.

Economic Impact: Pros and Cons

Economically, improving basketball infrastructure can create substantial benefits for local communities. The NBA Basketball School serves as a prime example, generating jobs in coaching and facility maintenance while attracting visitors for tournaments that stimulate local businesses. Additionally, events organized around basketball can foster sports tourism, creating a cycle of economic activity that supports the community's growth. Projects like De Cancha en Cancha have also demonstrated that revitalized sports spaces can enhance local economic activity by drawing crowds and fostering tourism.



Figure 5. Picture of NBA Basketball School in Latin America project.

On the other side, the economic impact may not be uniformly positive. The high initial costs associated with constructing or renovating basketball facilities can strain local budgets, diverting funds from other essential services. For instance, the Barrios en Juego project faced challenges in ensuring long-term funding for maintenance after initial renovations were completed. If economic benefits are not equitably distributed among community members, gaps may persist, leaving some groups without access to the resources generated by these projects.

For Lima Centro, such projects should consider diversified funding sources and public-private partnerships to ensure their sustainability and potential for growth.

Environmental Sustainability: Pros and Cons

The case studies provide valuable insights into integrating sustainability into sports infrastructure. For example, Barrios en Juego implemented waste management systems alongside facility renovations, promoting environmental responsibility within the community. Additionally, initiatives like Mini Basketball by FIBA included environmental education components that raised awareness about sustainability among young athletes. For example, in Costa Rica, youth leaders have incorporated environmental education into their programs, highlighting how sport can be a tool for social change and ecological awareness. FIBA aims to make its events carbon neutral by 2050, putting in place stricter regulations to ensure that sporting activities minimize their environmental impact. This includes offsetting the CO₂ emissions generated by its operations.



Figure 6. Picture of (Mini Basketball Projects in Latin America-FIBA)project.

Despite these positive aspects, challenges regarding environmental sustainability remain. If not carefully managed, the construction and operation of new facilities could lead to increased resource consumption and waste generation. For instance, while De Cancha en Cancha aimed to revitalize public spaces sustainably, there are concerns about the environmental impact of increased traffic during events if sustainable transportation options are not prioritized. Ensuring that all stakeholders focus on environmental considerations will be crucial for achieving long-term sustainability goals in basketball infrastructure development.

If Lima Centro adopts a similar model, it will be essential to include ecological maintenance plans and promote sustainable practices, such as material recycling and environmental education, to lessen the strain on local resources and foster a culture of sustainability among users.





PROGRAM	LOCATION	DESCRIPTION	PROS	CONS	SUSTAINABILITY
Barrios en Juego (Buenos Aires, Argentina)		Renovation of sports facilities in disadvantaged areas, with community participation in design and maintenance, promoting social cohesion and safety.	<ul style="list-style-type: none"> Improvement of sports facilities. Community participation. Increased security. 	<ul style="list-style-type: none"> Dependence on limited resources. Sustainability linked to community participation (it doesn't work without participation) 	<ul style="list-style-type: none"> Economic: Increase in local value. Social: Cohesion and reduction of violence. Environmental: Sustainable use of public spaces.
Proyectos de Mini Baloncesto (Latin America)		Initiative that brings basketball to vulnerable communities, promoting leadership, gender equality and opportunities for young people. It has expanded to several countries.	<ul style="list-style-type: none"> Improvement of sports facilities. Community participation. Increased security. 	<ul style="list-style-type: none"> Logistical challenges in remote areas. Limited resources for continuity. 	<ul style="list-style-type: none"> Economic: Job opportunities. Social: Equality and social cohesion.
De Cancha en Cancha (Santiago de Chile, Chile)		Transforming public spaces with urban art and sport. Promoting social inclusion and community leadership through the creation and maintenance of revitalized spaces.	<ul style="list-style-type: none"> Art and sport together. Social inclusion. Training of community leaders. Revitalize spaces. 	<ul style="list-style-type: none"> Lack of resources to maintain urban art. Dependence on external support. 	<ul style="list-style-type: none"> Economic: Attracts local investment. Social: Promotes a sense of community. Environmental: Efficient use of public spaces.
NBA Basketball School (Latin America)		International basketball school that trains talented young people, giving them access to professional opportunities in sport, with high-level coaches and a global presence.	<ul style="list-style-type: none"> Vocational training. International networks. Inspiration for young people. High-level coaches. 	<ul style="list-style-type: none"> Accessibility limited by costs. Geographical exclusivity. Focus on sports elites. 	<ul style="list-style-type: none"> Economic: Career opportunities. Social: Education through sport.

Table 1. Case study comparative Analysis

Method 2: survey

In this method, the analysis is based on a survey of residents and users of Lima Centro on their preferences and perceptions regarding sports facilities. The results of each question are presented below with their interpretation.

DEMOGRAPHY:

Age:

21 Responses

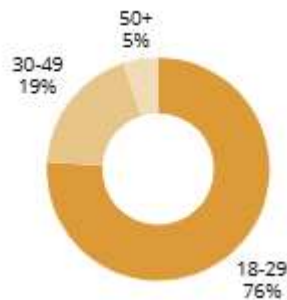


Figure 7. Pie-chart of demography' respondents

Age: The majority of respondents (76.19%) fall within the 18-29 age range, indicating a strong interest in sports facilities among young adults. This demographic could be particularly beneficial for sports initiatives, as it suggests a user base that might have a high level of physical engagement and a vested interest in community resources that foster social and recreational activities. Considering that approximately 27% of the population in Lima Metropolitana is young, this suggests a significant potential user base for basketball facilities, particularly in Lima Centro, where sports infrastructure is currently limited.

Genre:

21 responses

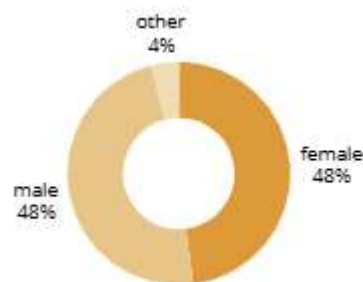


Figure 8. Pie-chart of demography' respondents

Genre: The gender distribution was balanced, with 48% identifying as male and 48% as female, with a small percentage choosing "Other." This balance shows a broad appeal of sports facilities across genders, underscoring the importance of inclusive space designs that cater to all groups.

RESIDENCE AND SPORTS PARTICIPATION

Are you a resident of Lima Centro?

21 responses

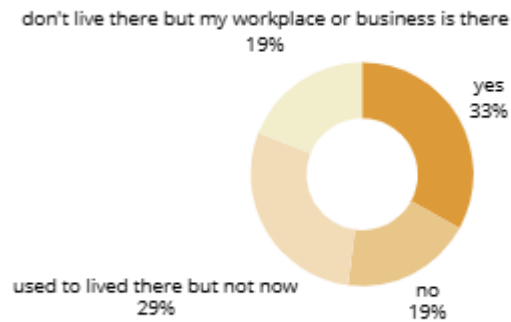


Figure 9. Pye-chart of residence and sport participation' respondents

Residence in Lima Centro: About 81% of respondents have some connection to Lima Centro, either as current or past residents, or due to work or business interests. This high level of local interest suggests a community invested in local sports facilities, likely because of a desire to see neighborhood improvements that align with their quality of life and recreational needs.

Do you play basketball regularly?

21 responses

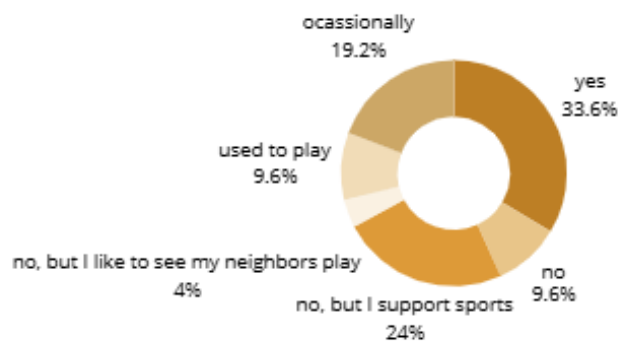


Figure 10. Pye-chart of residence and sport participation' respondents

Basketball Participation: More than half of those surveyed (61.9%) play basketball occasionally or support sports in their area. This indicates that there is a certain interest in supporting sports that can be used to maintain a sports space and be used by the community. This may be due to the age of the respondents, which shows that the majority are young people or young adults, which can be seen reflected in the need for a certain sports space.

SPORTS FACILITY PREFERENCES

¿Do you prefer an exclusively basketball facility or a multi-sport space?

13 responses



Figure 11. Pye-chart of preference of sport facility' respondents

Exclusive Basketball vs. Multisport Spaces: The survey results show a slight preference for multisport spaces over an exclusively basketball court, so it can be deduced that the versatility of sports is appreciated by respondents interested in sports. Although there is also almost equal interest in an exclusive Basketball space. This could be resolved in a multi-sports space for the entire community. Even those who were not interested in sports can be attracted by the social use of this space. And in this way a basketball space would be provided for those interested, but still satisfying the need to see more sports in the area.

Do you use a public or private sport facility?

12 responses



Figure 12. Pie-chart of preference of sport facility' respondents

Public Facilities vs. Private: The use of public and private sports facilities is quite balanced, which shows that both are essential for the community. This balanced use also highlights socioeconomic differences in access to sports infrastructure. At least almost half of those surveyed, especially those with low economic resources, depend on public courts exclusively. So, improving public basketball courts would help address equity in access to sports, offering all community members, regardless of income, a safe and attractive space to play and gather.

Do you feel that there are fewer opportunities to find private courts based on your gender?

13 responses

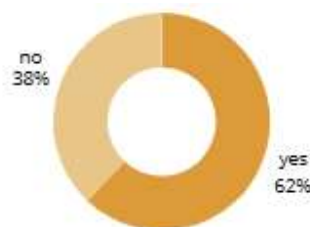


Figure 13. Pie-chart of preference of sport facility' respondents

More than half of respondents (62%) feel there are fewer opportunities to access private courts based on gender, suggesting a perception of inequality in the availability of these facilities. This data suggests the importance of considering gender inclusion in both the planning and management of sports facilities to promote equitable access to these sports spaces. Gender inclusion should even be seen from the promotion of these sports spaces or the sport itself.

ACCESSIBILITY AND CONVENIENCE

Do you feel that a private sports space is within your budget?

13 responses



Figure 14. Pie-chart of accessibility and convenience' respondents

Opinions on the affordability of private sports facilities are divided, suggesting that cost may be a barrier for many people. In Lima Centro, socioeconomic level is a crucial part of pursuing this sporting interest. This area includes districts such as Cercado de Lima, La Victoria and Breña, which have great economic and social diversity, but are generally considered to have low to medium socioeconomic levels. This means that many people in this area face financial constraints that make it difficult for them to access private sports facilities, which are often seen as too expensive for these communities.

Do you prefer a sports space near your workplace/study center or your home?

13 responses



Figure 15. Pie-chart of accessibility and convenience' respondents

Proximity to facilities: Respondents prefer, albeit slightly, to have sports facilities close to home, which shows how important convenience and easy access are. However, the fact that opinions are so divided suggests that it is also relevant to have these facilities close to work or places of study. This indicates that having distributed sports infrastructure could be a better way to address community needs.

What time do you prefer to use the sports space?

13 responses

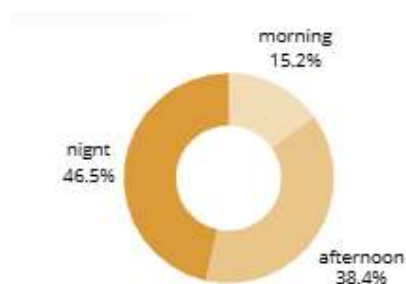


Figure 16. Pie-chart of accessibility and convenience' respondents

Preferred Usage Time: Almost half of the respondents (46%) prefer using sports facilities in the night. In this research, the majority of respondents work or study because of the age of respondents so that may influence their preference in the night. The night preference emphasizes the importance of well-lit, secure facilities, especially in urban areas where security is a concern.

During the selected time, do you feel safe using the sports area?

13 responses

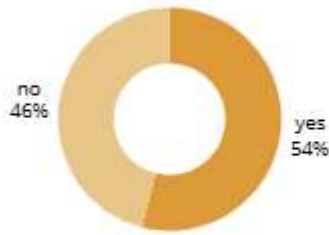


Figure 17. Pie-chart of accessibility and convenience' respondents

Safety concerns: Opinions on safety in sports venues are quite divided, revealing that there are significant concerns about safety in these spaces, especially during preferred exercise times. It is clear that for many people, feeling safe while enjoying their physical activity is essential. This security could focus on night use because it is the preferred time of the respondents, and as mentioned above it should be reflected in well-lit, secure facilities.

Is transportation available to get from your workplace/study center to the sports facility at the selected time?

13 responses

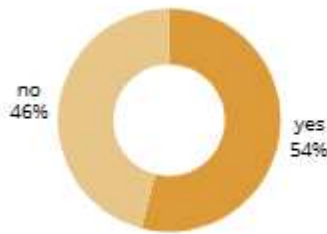


Figure 18. Pie-chart of accessibility and convenience' respondents

Availability of Transportation: A bit more than half of those surveyed (53.85%) mentioned that they have access to transportation to get to sports facilities, while 46.15% do not have this option. This division highlights the need to improve transportation options or locate facilities in more accessible locations. By doing so, we could increase the use of these facilities and make it easier for more people to stay active and healthy. This data also reflects that respondents possibly look for sports spaces close to their home, seen previously in the interest of said location, so transportation would not indicate a barrier when accessing said sports spaces if it is within a walking distance.

What concepts would you relate to the following public sports facilities?

13 respondents



Figure 19. Example of poorly maintained basketball courts

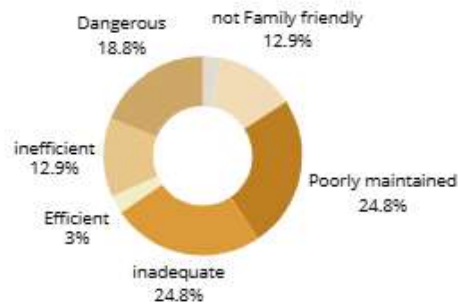


Figure 20. Pye-chart of accessibility and convenience' respondents

Condition and Maintenance: The majority of respondents rated sports facilities as inadequate, poorly maintained and inefficient. This perception about the proposed photos shows that facilities like these are not well accepted by the community, so this type of sports facilities would not be used. There is even a certain percentage that classify them as dangerous and not suitable for children. So having these types of neglected facilities generates a feeling of security. However, there is a minimum percentage that qualifies them as fun, so this indicates that although the majority does not have a good acceptance of the area, it would not be 100% due to the fact that a certain number of people do not see it in the same way.

Would you like to see these facilities gone or improved?

12 responses

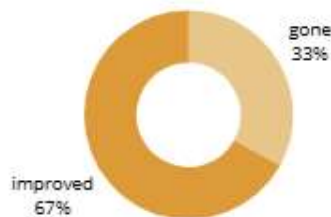


Figure 21. Pye-chart of accessibility and convenience' respondents

Answers:

I would like to see these facilities gone, because...

- Would be better new and private courts.
- They generate danger.
- Create insecurity.
- Seem dangerous for the neighborhood.

I would like to see these facilities improved, because...

- They will be used if they are improved.
- The space is optimum, just be needed to improve the suitable soil treatment for the game, even elements like a canopy.
- They are useful for the community.
- Could be used because they look safe.
- It is a space to stay healthy.
- Promote the sport and attract people to develop more cultural activities to each age.
- Could be used because they are improved.

Preference for Improvement Over Removal: A majority (66.67%) of respondents would prefer to see improvements to existing facilities rather than their removal. This preference underscores a community desire for better-maintained and enhanced public spaces, which could offer broader benefits if improved rather than abandoned.

Comments for Removal of Facilities

- **Preference for New and Private Courts:** Some respondents express a desire for new, private facilities, suggesting a perception that private courts may offer better quality or safety than current public options. This preference reflects concerns about the condition and maintenance of existing public facilities, where outdated infrastructure may not meet users' expectations for a safe and modern environment.
- **Concerns about Safety and Insecurity:** Comments such as "they generate danger," "create insecurity," and "seem dangerous for the neighborhood" highlight significant concerns about safety. For some residents, the existing facilities are not seen as safe spaces, possibly due to poor lighting, lack of supervision, or incidents of crime around these areas. This perception of insecurity is a strong factor motivating the preference for removing these facilities, as community members may feel that they compromise neighborhood safety.

Comments of Preference for Improvement of Facilities

- **Increased Usage if Improved:** Comments like " They will be used if they are improved" suggest that many community members see potential in these spaces and believe that enhancements would make them more attractive and functional. Improvements could increase regular usage, fostering a stronger sense of community around these facilities.
- **Optimizing Existing Space:** One respondent noted, " The space is optimum, just be needed to improve the suitable soil treatment for the game, even elements like a canopy." This feedback indicates that the fundamental layout and location of the facilities are beneficial, but specific upgrades, such as resurfacing the ground and adding amenities like shade, would make the courts more user-friendly and safer, especially in a region where sun exposure can be intense.
- **Community Utility and Health Benefits:** Several comments, such as "they are useful for the community" and "it is a space to stay healthy," reflect the perception that these facilities provide essential community and health benefits. Residents recognize the role of sports infrastructure in promoting physical activity and well-being, especially in Lima Centro where accessible recreational options may be limited for lower-income residents.
- **Safety and Accessibility Improvements:** The comment " Could be used because they look safe " suggests that some respondents would be willing to use these facilities more because safety measures were implemented. This suggests a need for enhanced security, such as improved lighting, regular maintenance, and possibly the presence of staff or security personal to ensure a safer environment for users.
- **Promotion of Cultural and Recreational Activities:** One respondent mentioned, " Promote the sport and attract people to develop more cultural activities to each age." This comment highlights the great social value of public sports facilities, as they can become centers for social events and inclusive recreational activities. If the fields are improved, they could be transformed into multifunctional spaces that encourage the development of sport and social cohesion. And by hosting events that attract people of

different ages and backgrounds, these facilities not only promote physical activity, but also strengthen community bonding, creating a sense of belonging and unity.

- **Potential for Upgrades:** The statement "They will be used if they are improved" indicates a willingness among some respondents to see these facilities upgraded rather than removed. This comment reflects the belief that existing infrastructure can still be used and optimized, which could be a more cost-effective and community-friendly option than starting from scratch with a new infrastructure.

What concepts would you relate to the following public sports facilities?

13 responses



Figure 22. Example of well-maintained basketball courts

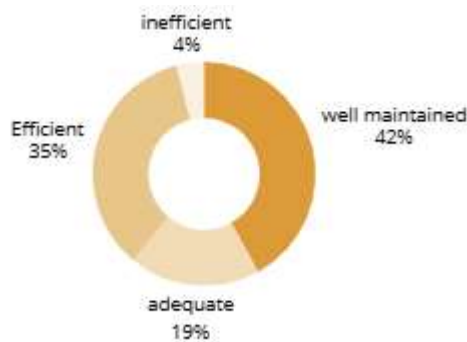


Figure 22. Pie-chart of accessibility and convenience' respondents

Condition and Maintenance: The majority of respondents rated sports facilities as adequate, well maintained and efficient. This perception about the proposed photos shows that facilities like these are well accepted by the community, so this type of sports facility would be used often rather than the other option. As well, there is even a certain percentage that classify them as inefficient. So possibly having these types of facilities does not generate a feeling of social connection. Even though there is 0% that respondents classify this as funny facility, so this indicates that although the majority does have a great acceptance of this perception, it would not be promoting a social connection with community.

Would you support the creation of more services like the one shown in the second set of images? Or would you prefer them to be private?

12 responses

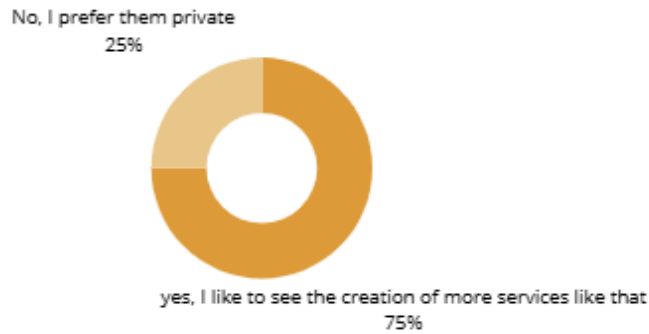


Figure 23. Pie-chart of accessibility and convenience' respondents

Support for New Facilities: About 75% of respondents expressed support for creating more public sports facilities, while 25% preferred private facilities. This strong support for public options shows that respondents have a economic concern in order to access to a well maintained sport facility.

Are you interested in having a sports space in your area?

8 responses

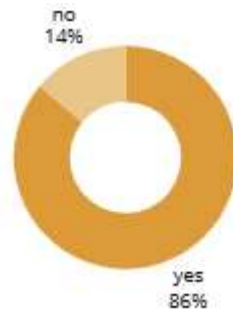


Figure 24. Pie-chart of accessibility and convenience' respondents

Almost all respondents that are just neighbors or have a relation with the area (86%) are interested in having a sports space in their area, which supports the demand for accessible and well-maintained sports facilities.

If not, why?

1 response



Figure 25. Pie-chart of accessibility and convenience' respondents

In the other side, safety concerns are the main reason for not wanting a sports facility in the area, underscoring the importance of addressing these issues to increase community acceptance.

Would you consider a sports facility near your area safe?

8 responses

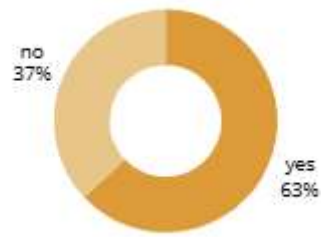


Figure 25. Pie-chart of accessibility and convenience' respondents

The perception of safety is mixed, indicating that there is work to be done to improve safety and the perception of safety in sports facilities, but more of the half of respondents, that are not related to a sport, feels that a sports facility is safe, possibly related to well-maintained sports facilities.

What concepts would you relate to the following public sports facilities?

8 responses



Figure 26. Example of poorly maintained basketball courts

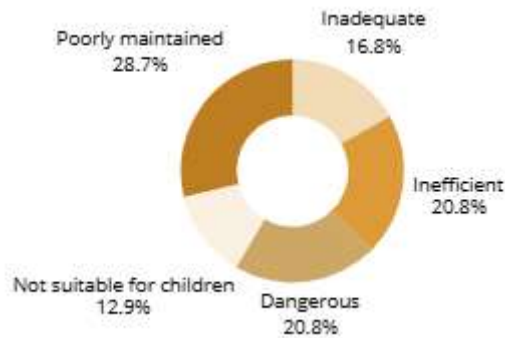


Figure 27. Pie-chart of accessibility and convenience' respondents

Condition and Maintenance: The majority of respondents rated sports facilities as poorly maintained, dangerous and inefficient. These results are really similar to the results from sports players and sport-supported people. This perception about the proposed photos shows that facilities like these are not well accepted by the community, but these respondents that are people related to the area, have a main concern about safety. And in these responses, there is no perception that classifies them as funny so 100 % of responses are negative to this facility.

What concepts would you relate to the following public sports facilities?

8 responses

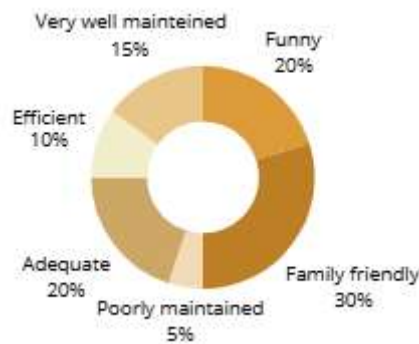


Figure 28. Pie-chart of accessibility and convenience' respondents

Condition and Maintenance: The majority of respondents rated sports facilities as adequate, family friendly and efficient. This perception about the proposed photos shows that facilities like these are well accepted by the community, so this type of sports facility would be used often rather than the other option. These results are similar to that sports players and sports-supported people but in this data shows that people that are not related to a sport see this facility as family friendly and even funny, but sport-related people does not.

Method 3: SWOT Analysis

Result from the comparative case study analysis and the survey evolved in a series of new awareness, to consolidate the knowledge, a more objective approach is set up via a SWOT (Strengths, Weaknesses, Opportunities, Threats) framework (method 3). This framework help evaluate the perceived input from diverse sources and how each source catalog the characteristics of each facility, the sustainability within the community, as well as its capacity to promote basketball as a tool for inclusion and personal development.

Barrios en Juego is a project of renovation of sports facilities in disadvantaged areas of Buenos Aires, Argentina, with community participation in design and maintenance, promoting social cohesion and safety.

One of the primary strengths of "Barrios en Juego" is its ability to foster social cohesion and create economic opportunities within the local community. This is a meaningful highlight since according to the "Manual of Sport and Environment" by the International Olympic Committee (2005), well-managed sports programs not only promote physical health but also enhance social inclusion and local development. The program's diverse range of sports activities attracts young people from different backgrounds, further strengthening social bonds. Additionally, partnerships with educational institutions and local organizations enhance its legitimacy and broaden its impact.

The global push toward achieving the Sustainable Development Goals (SDGs) offers a favorable environment for programs like "Barrios en Juego." The Ibero-American Sports Council (2019) emphasizes the role of sports in reducing inequalities and promoting health, aligning well with the goals of this program. The increasing demand for recreational activities in vulnerable neighborhoods provides a strong platform for expansion. Furthermore, basketball's rising popularity, both nationally and internationally, opens opportunities for sponsorships and partnerships that can sustain the program in the long term, increasing its visibility and resources.

Despite its strengths, "Barrios en Juego" is heavily reliant on external funding, making it susceptible to economic fluctuations in Argentina. Lemke (2017) notes that without sustainable financial support, many sports programs struggle during economic downturns, which is a pertinent issue for this program. Furthermore, Barbosa and Urrea (2018) stress the importance of continuous training for coaches, which remains a challenge due to the limited infrastructure in some neighborhoods with low funding. The lack of consistent resources impacts the program's ability to maintain high-quality activities, signaling a need for more robust infrastructure and funding strategies to support long-term growth.

Argentina's economic instability, along with competition from other recreational programs, threatens the sustainability of "Barrios en Juego." According to the Ibero-American Sports Council (2019), a lack of safe spaces for physical activity is a significant barrier for youth participation in sports. Insecurity and poor facility maintenance pose additional risks, potentially deterring young people from engaging in the program. Addressing these external threats will require strategic planning and the involvement of local authorities to ensure the provision of safe and well-maintained sports facilities. By mitigating these risks, the program can continue to offer a safe and inclusive environment for youth development.



Table 2. SWOT analysis

However, the program faces significant challenges such as reliance on external funding, insufficient infrastructure, and the need for continuous coach training. External threats like competition with other programs and lack of safe, well-maintained facilities further complicate its sustainability. Addressing these issues is crucial for the program's long-term success and impact.

The Mini Basketball projects of FIBA in Latin America is a Initiative that brings basketball to vulnerable communities, promoting leadership, gender equality and opportunities for young people. It has expanded to several countries like Argentina, Brasil, Chile, Colombia, Uruguay, México, Venezuela, Paraguay, Perú, etc.

One of the standout strengths of the Mini Basketball programs is their focus on social sustainability. Designed to promote teamwork and community participation, these initiatives help children in disadvantaged areas develop leadership skills (FIBA, 2023). This aligns with SDG 4 and SDG 3, which target education and well-being. By integrating sports into marginalized communities, the programs provide an inclusive platform where children from diverse backgrounds participate equally. The importance of this inclusivity is underscored by the way these programs strengthen community ties and social cohesion, offering long-term benefits for social development.

Moreover, Mini Basketball programs emphasize gender equality by ensuring both boys and girls have equal opportunities to participate in the sport (UNEP, 2022). This aligns with SDG 5, which aims to promote gender equality, making the program a tool to combat the social marginalization of girls in areas with pronounced gender disparities. Despite these advances, a major limitation is that some areas face resource and infrastructure constraints, which restrict the programs' reach (FIBA Foundation, 2023). Thus, while progress has been made, more needs to be done to ensure that all youth, regardless of gender, have access to these opportunities.

There are significant opportunities to improve the environmental sustainability of the Mini Basketball programs. By partnering with organizations like the UN Environment Program (UNEP), FIBA can introduce greener practices, such as renewable energy use at events and reducing single-use plastics (UNEP, 2022). Aligning these efforts with the UN's Sport for Climate Action Framework would help Mini Basketball contribute to SDG 13 (climate action) while enhancing its environmental impact. Expanding these initiatives could transform the program into a broader vehicle for environmental education and sustainable practices.

Another opportunity for FIBA is to secure long-term financial support through corporate social responsibility (CSR) partnerships. MDPI (2021) highlights that by aligning with sustainability goals, such partnerships can provide consistent funding while also contributing to local economic development. By developing strategic collaborations with the private sector, FIBA can overcome the financial limitations that currently limit the growth of its Mini Basketball programs. Ensuring stable funding will enhance the programs' ability to reach more communities and improve both their economic and social impact.

While Mini Basketball has promoted social inclusion, its contribution to environmental sustainability remains limited. According to UNEP (2022), sports events, including those organized by FIBA, generate significant environmental impacts, such as carbon emissions from travel and waste generated during events. Although FIBA's "Basketball for Good" initiative includes some environmental awareness efforts, a more structured approach to integrating sustainability, such as eco-friendly materials for facilities and waste reduction, is needed to reduce the overall environmental footprint of these programs (MDPI, 2021).

Several external threats could undermine the success of Mini Basketball. Economic instability in Latin American countries poses a significant challenge, as government funding for sports initiatives may be reduced during financial crises (FIBA, 2023). Additionally, soccer's dominance in the region diverts attention and resources away from basketball, limiting growth potential (FIBA Foundation, 2023). Climate change is another threat, particularly in regions prone to extreme weather conditions, which can disrupt outdoor

sports programs (UNEP, 2022). Addressing these threats will be crucial for the program’s long-term viability.



Table 3. SWOT analysis

In conclusion, FIBA’s Mini Basketball initiative in Latin America demonstrates the power of sports in advancing sustainability, particularly in social inclusion and youth development. The programs excel in promoting social sustainability by providing equitable access to sports for disadvantaged communities. However, their long-term success requires addressing weaknesses in environmental sustainability and economic resilience. By integrating eco-friendly practices and securing sustainable funding, FIBA can ensure that its Mini Basketball programs continue contributing to the SDGs.

The “De Cancha en Cancha” project serves as an innovative example of how urban spaces can be revitalized through the integration of sports and urban art. This initiative, based in Chile, addresses several socio-cultural and urban challenges by transforming neglected public areas into spaces that foster community interaction, physical activity, and artistic expression.

One of the main strengths of the “De Cancha en Cancha” project is its ability to transform public spaces through urban art and sports, revitalizing areas that may have been underused or neglected. This strategy aligns with the concept of placemaking, which focuses on designing public spaces to enhance community well-being. The International Olympic Committee (2005) emphasizes the significance of transforming public spaces to instill a sense of ownership and pride within communities, which promotes responsibility and care for these areas. By actively involving the community, particularly the youth, in the creation and maintenance of these spaces, the project strengthens social bonds and encourages leadership development. According to Barbosa & Urrea (2018), such involvement fosters a sense of belonging and builds social capital by giving young people meaningful roles within their communities.

In addition to community engagement, the project’s integration of both sports and urban art serves as a powerful tool for fostering social cohesion. Sports provide a universal

platform for promoting teamwork and physical activity, while urban art enhances the cultural and aesthetic value of the environment. This combination creates a focal point for community interaction, enriching the social fabric of the area. Lemke (2016) notes that the integration of these elements aligns with international sustainable development goals (SDGs), particularly those aimed at promoting inclusive and sustainable urbanization. The project's alignment with global agendas further solidifies its role as a model for sustainable urban development.

The “De Cancha en Cancha” project presents numerous opportunities for growth and international recognition. One significant opportunity is its potential to attract support within the framework of the SDGs. Lemke (2017) highlights that the global agenda for sustainable development increasingly acknowledges the role of sports in achieving key social and environmental goals, such as promoting good health, fostering inclusion, and supporting sustainable cities and communities. This alignment opens doors for international partnerships and funding opportunities that could expand the project to other regions in Chile or even to other countries. With strategic planning, the project could serve as a scalable model that inspires similar initiatives in urban areas facing comparable challenges.

Despite its strengths, the project also faces several weaknesses that could impede its long-term success. A notable weakness is its reliance on external funding sources, such as sponsorships or grants, to maintain the financial stability of the revitalized spaces. The International Olympic Committee (2005) points out that projects dependent on fluctuating financial streams may struggle to achieve long-term sustainability. Without a stable funding model or diverse revenue streams, “De Cancha en Cancha” could be vulnerable to economic shifts or changes in sponsorship priorities. Exploring alternative funding models, such as community-driven fundraising, public-private partnerships, or integrating commercial elements, would be beneficial for the ongoing maintenance of these spaces.

Another internal challenge is maintaining consistent community involvement over time. While initial enthusiasm may be high during the transformation phase, sustaining engagement for the long-term upkeep of the spaces can be difficult. According to Unidada Latina (2024), cultural and social barriers, in addition to access to resources and funding, can discourage ongoing participation in sports. This relates to the possible lack of motivation to care for revitalized spaces in the long term, as these cultural obstacles may diminish community interest and commitment over time. Ensuring continuous involvement requires fostering a sense of long-term ownership among community members, possibly through the creation of local committees or organizations responsible for the upkeep of these spaces.

Externally, the project faces several threats that could undermine its impact. One key threat is the lack of ongoing support from local authorities or the absence of public policies that prioritize the transformation of public spaces through sports and urban art initiatives. The Ibero-American Sports Council (2019) stresses the importance of aligning such projects with public policies to guarantee their longevity and integration into urban planning strategies. Without institutional backing, the project may struggle to secure the necessary legal and logistical support to ensure the continuity of the revitalized spaces. Failure to engage local governments could limit the project's reach and diminish its potential impact.

Another threat arises from social risks associated with public spaces, such as vandalism, crime, or neglect, which could negatively affect the project’s outcomes. The presence of crime or vandalism in and around revitalized areas may deter community members from utilizing these spaces, undermining the project's positive social and cultural impact. This situation highlights the need for comprehensive security measures, community policing, and ongoing efforts to cultivate a sense of shared responsibility among residents to ensure the protection and durability of these spaces.

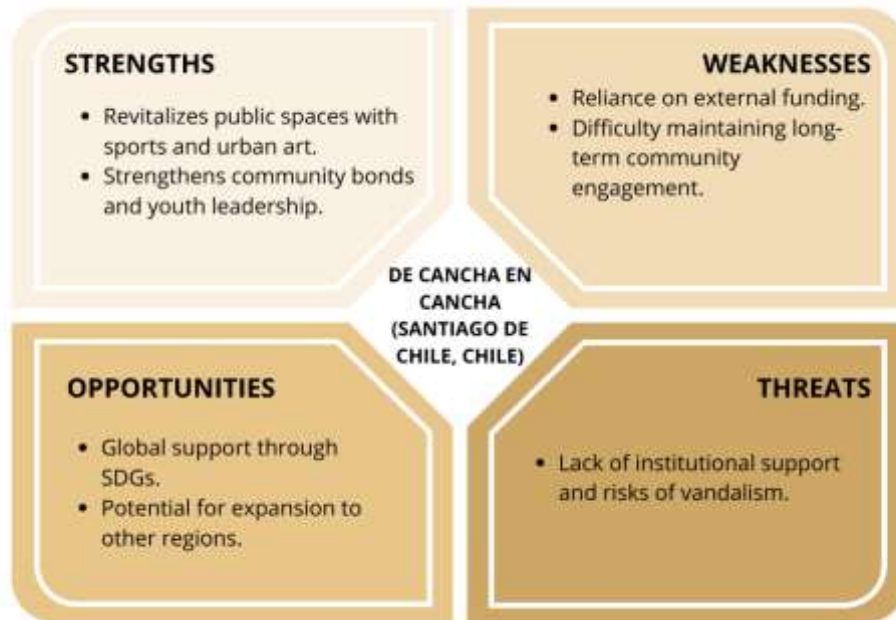


Table 4. SWOT analysis

In conclusion, the “De Cancha en Cancha” project demonstrates significant strengths in its approach to urban revitalization, social cohesion, and community empowerment. By integrating sports and urban art, it transforms physical spaces and strengthens social ties within the community. The project’s alignment with international sustainable development goals presents opportunities for expansion and replication in other urban areas. However, addressing weaknesses such as reliance on external funding and sustaining community engagement is crucial for long-term success. Additionally, the case must navigate external threats, including a lack of policy support and risks related to public safety, to ensure its continued positive impact. With strategic planning and strong partnerships, “De Cancha en Cancha” has the potential to become a model for urban transformation across Latin America and beyond.

The NBA Basketball School in Latin America represents a significant initiative for the development of basketball in the region. However, its success hinges not only on the quality of sports training but also on its ability to integrate sustainable practices that meet the current demands of the global sports environment. This dual focus is essential for the program to remain relevant and impactful in a rapidly evolving landscape.

One of the main strengths of the NBA Basketball School is its connection to a global network that promotes basketball at both professional and amateur levels. This network facilitates the exchange of knowledge and resources, enabling the incorporation of sustainable practices increasingly valued by sports organizations (Sportmadness, 2024). The growing

popularity of basketball in Latin America offers a unique opportunity to expand these programs, attracting young talents who seek sports development alongside a commitment to sustainability (Anesma, 2024). By leveraging its global connections, the school can enhance its training methods and provide valuable experiences for participants.

Moreover, by implementing sustainable initiatives, the NBA Basketball School can enhance its public image and attract sponsors interested in investing in socially responsible projects. These initiatives can encompass various aspects, from efficient resource use to promoting ecological values among students (ISPO, 2024). Such a commitment to sustainability not only bolsters the school's reputation but also aligns with the expectations of modern consumers and stakeholders who prioritize corporate social responsibility.

Despite these opportunities, the NBA Basketball School faces inherent weaknesses, particularly in the implementation of sustainable practices. The lack of local experience in adapting these practices to the specific cultural and economic contexts of Latin America can pose significant challenges (Sportmadness, 2024). This school must carefully tailor its initiatives to the unique characteristics of each country to ensure effectiveness and acceptance within local communities. Without this localization, the potential impact of the programs may be diminished.

Regarding threats, the NBA Basketball School faces competition from other sports academies that have already integrated sustainable practices. If the school fails to adequately differentiate itself, it may struggle to attract participants and funding (Revista Apunts, 2024). Additionally, economic fluctuations in Latin American countries can adversely affect both participation rates and the financial resources available for these initiatives (Iberdrola, 2024). These external factors present ongoing challenges that the school must navigate to maintain its growth and effectiveness.



Table 5. SWOT analysis

In conclusion, the NBA Basketball School has the potential to establish itself as a leader in the sustainable development of sports in Latin America. However, achieving this status requires a strategic approach that combines its global prestige with a genuine commitment

to sustainable practices tailored to the local context. By doing so, the school will not only contribute to the development of basketball in the region but also establish a replicable model for other sports organizations. This commitment to sustainability and local relevance is vital for the long-term success of the initiative.

V. DISCUSSION

The results obtained through research show the complex relationship between sports infrastructure, specifically for basketball, and sustainable urban development in Lima Centro. This discussion aims to contrast the findings with existing literature and the SWOT analysis conducted.

Infrastructure and social cohesion

A clear demand for quality sports spaces in Lima Centro was showed, aligning with Barbosa and Urrea's assertions about the importance of sports infrastructure in urban areas (Barbosa & Urrea, 2018). Survey respondents expressed a strong desire for improved facilities, highlighting their potential to foster social cohesion and community spirit. However, while the literature emphasizes the social benefits of sport, the SWOT analysis identified the perception of insecurity in some existing sports spaces as a weakness. This suggests that the presence of infrastructure is insufficient, comprehensive management addressing security concerns is necessary to maximize social benefits, as demonstrated by initiatives like "Barrios en Juego" in Argentina.

Environmental sustainability

The case studies analyzed demonstrate how the revitalization of sports spaces can contribute to urban sustainability. This aligns with trends identified by ISPO (2024) regarding the importance of the circular economy in sports. Interestingly, while the survey results show a preference for improved public facilities, they also reveal a limited understanding of environmental sustainability concepts among respondents. This gap in awareness suggests an opportunity for education and consciousness-raising in this area. The lack of clear notions about sustainability among survey participants highlights the need for integrated approaches that combine sports infrastructure development with environmental education. As noted in the case study comparative analysis, initiatives like FIBA's Mini Basketball projects in Latin America have shown that sport can be aligned with sustainability goals, not only at a social level but also environmentally, integrating practices such as the use of renewable energy and reducing the environmental impact of sporting events.

Economic sustainability

From an economic perspective, the survey results strongly indicate a preference for public sports facilities over private ones. This preference is particularly significant given the socio-economic context of Lima Centro, where income levels vary from medium to low. The emphasis on public spaces suggests that community members recognize the broader economic benefits that accessible sports infrastructure can bring to the area, while also reflecting the economic constraints faced by many residents. The preference for public facilities aligns with the potential for job creation and local economic activity mentioned by Sportmadness (2024), which is reflected in respondents' willingness to support the creation of more public sports facilities. In the context of Lima Centro's socioeconomic profile,

public sports spaces can serve as equalizers, providing opportunities for physical activity and community engagement regardless of individual economic circumstances. However, the SWOT analysis identified the lack of public funds as a threat, which is indirectly supported by survey responses indicating budget concerns for private facilities. This poses a challenge for implementing long-term sustainable projects and highlights the need for innovative funding models, especially in areas with limited economic resources. As noted in the literature review, programs such as "Barrios en Juego" in Argentina and "De Cancha en Cancha" in Chile have shown how the rehabilitation of sports spaces can foster social cohesion and contribute to local economic development, even in economically challenged areas (Ibero-American Sports Council, 2019; Barbosa & Urrea, 2018). The preference for public facilities underscores the importance of considering sports infrastructure as a public good that can generate positive externalities for the local economy. This aligns with the broader goals of sustainable urban development, where sports facilities can serve as catalysts for community revitalization and economic growth. In Lima Centro, where economic resources may be limited, investing in public sports infrastructure could provide a cost-effective means of promoting physical health, social integration, and local economic stimulation. Moreover, the development of public sports facilities in Lima Centro could potentially attract visitors from other areas, fostering local businesses and creating informal economic opportunities around these spaces. This could contribute to a more dynamic local economy, providing additional income sources for residents in an area where economic opportunities may be limited.

Inclusion and accessibility

A key finding from the survey was the importance of accessibility in terms of location and schedules. Respondents showed a preference for sports facilities near their homes or workplaces, with varying time preferences throughout the day. This underscores the need to consider specific local factors when planning sports infrastructure, as suggested by the Ibero-American Sports Council. Moreover, the survey revealed potential gender disparities in access to private courts, highlighting the need for more inclusive sports policies. This aligns with the broader goal of creating more inclusive and sustainable communities (SDG 11) mentioned in the literature.

Challenges and opportunities

The SWOT analysis revealed the growing interest in basketball at the national level as a strength, which is confirmed by survey respondents' willingness to support the creation of more sports facilities. However, the threat of crime and perception of insecurity identified in the SWOT analysis was also reflected in survey responses, particularly regarding evening use of facilities. This highlights the need to address these issues comprehensively in any infrastructure development plan. A key opportunity identified in the analysis is the potential of sport to contribute to multiple SDGs. The survey results suggest that, with proper planning, improving basketball infrastructure in Lima Centro could effectively contribute to health and well-being (SDG 3), reducing inequalities (SDG 10), and creating sustainable communities (SDG 11).

VI. CONCLUSIONS

To answer the research question: How can the development of adequate basketball infrastructure in Lima Centro foster sustainable urban environments and promote social

inclusion? This research concludes that the development of proper basketball infrastructure in Lima Centro can significantly contribute to creating a sustainable urban environment and promoting social inclusion enhancing accessibility through several key points:

- By a multi-sport facility supported by a preference in the survey results that can serve diverse community needs in other physical activities apart from basketball.
- Having a strategic location near residential areas or in instance near a workplace or study center to make possible an accessible sport facility for everyone interested after or before their activity based on the age of respondents.
- Enhancing safety through an improved infrastructure that revitalizes neglected public spaces, making the neighborhood more enjoyable and accessible for everyone.
- An affordable sport facility as a public court based on the economic level of Lima centro.
- Having internal and external funding like public-private partnerships so in this way it does not depend on a single source of income and its long-term success would not be threatened like seen in the SWOT analysis.
- Job creation in maintenance, event organization, and related services, contributing to sustainable urban development as seen in the NBA Basketball School case study.
- Promotion and equal access to both genders were seen as needed in the lack of access reflected in the survey.
- Renovated and well-maintained sport facility by the community based on the case study comparative analysis that shows examples of how community involvement.
- Enhance a sustainable environment with promoting health and well-being (SDG 3), reducing inequalities (SDG 10), and creating sustainable cities and communities (SDG 11).
- Promoting sustainable education practices, carbon neutral in events like Mini Basketball Case study by FIBA and waste management

Recommendations:

- Integrate community participation in the design and maintenance of sports facilities to foster a sense of ownership and shared responsibility. This approach can enhance the sustainability of basketball infrastructure in Lima Centro by ensuring that facilities reach local needs and are well-maintained over time.
- Align sports infrastructure development with Sustainable Development Goals, particularly SDG 10 (reduced inequalities) and SDG 11 (sustainable cities), to address social and environmental challenges in Lima Centro.
- Implement programs that combine basketball with urban art initiatives and public space revitalization, following successful models like "De Cancha en Cancha" in Chile to enhance community engagement and social cohesion.
- Current programs such as "Limeños al Bicentenario" can be used, which brings together residents of Lima to remodel deteriorating public spaces.

- For future projects it would be good to consider districts of Lima Centro such as "Cercado de Lima" or "La Victoria" that do not have a large number of adequate public and sports areas, so there are ideal to be improved.

Limitations:

This research faced some limitations, including the distance from the research to Lima Centro, which restricted some direct observations and in-person engagement with the users. Apart from that, the short duration of the academic course also restricts the survey outreach and data collection timeframe, potentially reducing sample representativeness. Additionally, the research is based on secondary data from case studies to complement the survey findings, which may not totally capture the socio-economic and cultural context of Lima Centro. So, these factors show the need for extended fieldwork and deeper local engagement in future research.

Future work:

Future research should focus on conduct a mapping of available spaces in Lima Centro to identify potential areas for renovated basketball facility development, ensuring equitable distribution and accessibility of sports infrastructure throughout the district. Investigate the possibility of establishing public-private partnerships to sustainably finance and maintain sports facilities, also exploring innovative funding models that can ensure the long-term viability of basketball infrastructure in Lima Centro.

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