

The Relationship between Workplace Environment Quality in Sports Facilities and the Performance Level of Practicing Athletes

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Abstract:

This study examined the relationship between the quality of the workplace environment in sports facilities and the performance of athletes in practice. The research focuses on support, environmental factors, and management, including practice facility conditions, order, and safety, to understand how these elements impact athletes' physical and psychological performance. Surveys and performance ratings from athletes across various sports facilities were used as data for the study. The findings reveal a positive relationship between the quality of the workplace environment and athlete performance. Aspects such as the availability of modern equipment, mental health services, and safety measures were found to positively impact athletes' performance. Therefore, it is possible to state that enhancing the workplace environment may result in improved well-being and athletic performance.

Keywords: Workplace environment quality; athlete performance; sports facilities; athletic well-being

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1. Introduction

The condition of the workplace in sports facilities is a very important factor that affects the performance of athletes. Studies have indicated that different aspects of the training environment like the physical condition of the facility, safety aspects, psychological factors and management practices can have a great effect on the performance of athletes. It is therefore important to know how these factors interact in order to influence an athlete's physical and psychological performance in order to enhance training environments. It is now widely accepted that an integrated approach to assessing sports facilities that focuses on both the environment and cognitive resources is necessary in order to support athletes. (Böhlke & Neuenschwander, 2015).

The importance of conditions, in enhancing an athletes performance is well acknowledged in the community. Research demonstrates the significance of factors like air quality and room temperature at sports venues on athletes health and performance. These environmental elements impact not capabilities like stamina and strength but also play a role, in mental focus and drive for athletes. (Cianfanelli et al., 2016; Kotko et al., 2022). Furthermore, the psychological impact of a well-designed facility, which provides a sense of safety and comfort, plays a crucial role in sustaining athlete focus and determination (Roskams & Haynes, 2019).

Athletes' success is influenced not only by the setting but also by the emotional and psychological atmosphere in sports facilities, which plays a crucial role in their performance levels. Top athletes tend to excel in environments that prioritize well-being and foster open communication between coaches and athletes. These spaces go beyond training; they provide a nurturing environment for personal development and mental resilience (Mitchell et al., 2024). The ability of sports organizations to address these emotional needs is key to sustaining motivation and preventing burnout (Larkin et al., 2022).

2. Literature Review

The importance of the work atmosphere at sports venues is gaining attention as an element that significantly impacts athletes' overall success and performance levels. Research conducted in the past has pointed out how different elements of the sports facility environment, like indoor air quality, lighting, temperature, and spatial planning, play a role in enhancing an athlete's performance capabilities. Studies stress the significance of a planned environment at sports facilities, not



only in enhancing physical training but also in creating an ambiance that promotes mental concentration and emotional health (Böhlke and Neuenschwander, 2015). Elite sports achievements heavily rely on the excellence of training facilities, extending beyond their structures to encompass the support they offer athletes. Additionally, as demonstrated in a study by Vargas and Gallego (2005), the quality of the environment impacts athletes' performance and overall well-being through factors like ventilation and comfort levels.

There are various aspects that can affect the performance of an athlete, including physical equipment, environment, safety, and psychological factors. As stated by Mitchell et al. in their 2024 article, an athlete's performance is greatly influenced by the environment they work in. Safety procedures and high-tech gear allow athletes to train with minimal possibility of getting hurt, which, in turn, yields better results (Cianfanelli et al., 2016). Emphasizing the significance of conditions in sports venues is crucial for athletes' well-being and performance levels; factors like air quality and lighting are important elements to consider in this regard. Additionally, providing support for health through programs that manage stress and foster positive team dynamics is essential for maintaining performance over the long term.

Roskams and Haynes (2019) assert that a sense of coherence, supported by a well-designed environment that promotes unity, can greatly enhance athlete contentment and positively impact their performance.

3. Study Questions:

This study aims to answer the following research questions:

3.1. General Research Question:

To what extent does the quality of the work environment contribute to improving the performance level of practicing athletes?

3.1.1. Sub-questions:

1. Is there a relationship between the quality of the work environment in sports facilities (facility conditions, safety procedures, psychological support, and general environment) and the performance of athletes in M'sila province?

2. What is the level of performance evaluations among athletes in terms of physical tests (endurance, speed, strength) and sport-specific assessments (shooting accuracy in basketball and timed races in swimming)?
3. Is there a correlation between the quality of the work environment in sports facilities (facility conditions, safety procedures, psychological support, and general environment) and athletes' performance?

4. Study Hypotheses:

The hypotheses of this study are as follows:

4.1. General Hypothesis:

The quality of the work environment generally contributes to improving the performance level of practicing athletes.

4.1.1. Sub-hypotheses:

1. There is a relationship between the quality of the work environment in sports facilities (facility conditions, safety procedures, psychological support, and general environment) and the performance of athletes in M'sila province.
2. The level of performance evaluations among athletes improves in terms of physical tests (endurance, speed, strength) and sport-specific assessments (shooting accuracy in basketball and timed races in swimming).
3. There is a correlation between the quality of the work environment in sports facilities (facility conditions, safety procedures, psychological support, and general environment) and athletes' performance.

5. Study Objectives:

This study aims to shed light on how the work environment affects athletes' performance through:

1. Examining the relationship between the condition of sports facilities and athletes' performance in M'sila province.
2. Identifying the relationship between the managerial experience of school directors and athletes' performance in M'sila province.
3. Evaluating the relationship between the management of sports facilities and athletes' performance in M'sila province.

6. Definition of Concepts and Terms:

6.1. Quality of Work Environment:



Some define it as: "The degree to which an individual attains a quality-of-life measure, which is reflected in their sense of satisfaction and happiness, and their ability to meet their needs through the capabilities and resources available to them" (Jamal, Taher, Fadhel, 2022, p. 946). Another definition describes the quality of work life or work environment quality as: "A comprehensive structure that includes the human resource function, which aligns with an individual's abilities, capabilities, qualifications, and skills in the workplace" (Al-Jamal, 2019, p. 27).

Operational Definition:

It is a modern strategy that involves providing a suitable work environment for human resources within an institution by ensuring all necessary resources that help employees achieve their potential, thereby ensuring job stability.

6.2. Sports Facilities:

Some define them as institutions established by societies to serve the sports sector in all its aspects, with an organizational structure that corresponds to the institution's size and objectives to benefit the community (Damana, 2023, p. 195). Another definition states that they are entities with legal personality, established by society to serve the sports sector comprehensively. They consist of an organizational structure designed to benefit the community and align with their founding objectives (Saadoudi, Laousin, 2022, p. 238).

Operational Definition:

Sports facilities refer to all spaces and locations specifically designed for engaging in various sports activities. These include stadiums, sports halls, and swimming pools, which require effective management to fulfill their intended purpose in society.

6.3. Athletic Performance:

Some define athletic performance as "the behaviors and activities performed continuously by an athlete to achieve better levels in the practiced sport" (Tahir, Leznak, Dakhia, 2023, p. 519).

Operational Definition:

Athletic performance encompasses all movements and exercises performed by athletes to ensure physical health and safety while developing sports skills according to the type of activity practiced.

7. Research Methodology

7.1. Study Design

This research employed **quantitative research design** in an effort to understand the link between the quality of the workplace environment in sports facilities and the performance of athletes in practice. Quantitative research is suitable for this study because it makes it possible to measure, compute and analyze numerical information in order to detect trends, relationships and cause-effect connections between certain variables.

The study included 200 athletes from Msila city selected from 10 different sports facilities; these facilities may be public and private gyms, training centers and high-performance sports clubs. The athletes will be of both genders, and will be involved in different types of sports to increase the diversity of the participants and the findings across different types of sports. The participants will be included if they are;

- **Age:** Athletes aged 18 to 35 years.
- **Experience:** Athletes with at least two years of active training experience in their respective sports.
- **Facility Type:** Participants will be recruited from sports facilities that are categorized based on the quality of their environment (high, medium, or low quality), ensuring a comprehensive comparison of different environments.

The following demographic data such as age, gender, years of experience, and type of sport will be obtained to adjust potential confounding variables in the analysis as shown in the table below:

Table 01: Participants Demographic Details

Attribute	Category	Number of Participants
Age	18–24 years	75
	25–30 years	80
	31–35 years	45
Gender	Male	120
	Female	80
Sport Type	Football	40
	Basketball	35
	Swimming	50



The Relationship between Workplace Environment Quality in Sports Facilities and the Performance Level of Practicing Athletes

Attribute	Category	Number of Participants
	Track and Field	75
Experience Level	2–5 years	100
	6+ years	100

Source: Author's Survey.

7.1. Data Collection

Data will be collected using two primary methods: **surveys** and **performance evaluations**.

1. **Surveys:** A structured **questionnaire** will be will be developed to be administered to the athletes regarding their perceptions of the workplace environment in their sports facilities. The Survey will include questions on the following:
 - **Facility conditions:** (cleanliness, equipment quality, space availability).
 - **Safety measures:** (emergency protocols, accident frequency).
 - **Psychological support:** (availability of mental health resources, coach-athlete relationship quality).
 - **Overall environment** (comfort, motivation, sense of security).

We can summarize in this table:

Table 02: Survey Variables for Workplace Environment Quality

Variable	Description	Measurement Scale
Facility Conditions	Cleanliness, equipment quality, space availability	Likert Scale (1–5)
Safety Measures	Emergency protocols, accident frequency	Likert Scale (1–5)
Psychological Support	Availability of mental health resources, coach support	Likert Scale (1–5)

Variable	Description	Measurement Scale
Overall Environment	Comfort, motivation, sense of security	Likert Scale (1–5)

Source: Author's Survey.

The survey will use a **Likert scale** ranging from 1 (strongly disagree) to 5 (strongly agree) to assess athletes strongly in agree relation to different aspects of their training milieu.

2. **Performance Evaluations:** Performance data will be collected through **Objective measurements** of athlete performance, such as:

- **Physical tests** (endurance, speed, strength).
- **Sport-specific assessments** (accuracy in shooting for basketball, time trials for swimming). These assessments will be made at the athletes' respective training centers in order to make the assessment of the athletes' performance more reliable and consistent.

Table 03: Performance Evaluation Criteria

Test	Description	Measurement Method
Endurance Test	Cardiovascular endurance (12-minute run test)	Time (minutes/seconds)
Strength Test	Maximum weight lifted in specific exercises (bench press)	Maximum weight (kg)
Speed Test	Sprint time (100-meter sprint)	Time (seconds)
Sport-Specific Assessment	Skill-based tasks (shooting accuracy in basketball)	Number of successful attempts/accuracy (%)

Source: Author's Survey.

7.1. Variables and Measures

The key variables in this study are:

1. **Workplace Environment Quality:** The dependent variable is the quality of the workplace environment, which can be measured by survey questions that relate to facility conditions, safety, and psychological support. The workplace environment will be classified into three levels—



The Relationship between Workplace Environment Quality in Sports Facilities and the Performance Level of Practicing Athletes

high, medium, and low—depending on the survey results from the athletes and the ratings of the facilities.

2. **Athlete Performance:** This is the dependent variable; it includes the physical performance tests as well as sport tests. The athlete performance data will be used to analyze the impact of the workplace environment on performance measures including strength, endurance, speed and sport related skills.
3. **Control Variables:**
 - **Age, gender, and years of experience** will be taken into account along with other factors to ensure that athlete performance is assessed fairly and accurately. These factors can impact an athlete’s performance regardless of external influences.

Table 04: Variables and Measures

Variable	Measurement Tool	Data Source
Workplace Environment Quality	Survey (Likert scale on facility conditions, safety, psychological support)	Athletes (Questionnaire)
Athlete Performance	Physical tests (endurance, strength, speed) and sport-specific assessments	Performance Evaluations
Control Variables	Age, gender, years of experience	Demographic Information

Source: Author’s Survey.

3.1. Data Analysis

The collected data will be analyzed using **statistical techniques** to examine methods that assess how the quality of the work environment impacts athletes’ performance.

1. **Descriptive Statistics:** Descriptive statistics will be used to summarize the details of the participants, along with the evaluations of the quality of the workplace environment and athlete performance, to gain a comprehensive understanding of how the data is distributed.

2. **Correlation Analysis: Pearson's correlation coefficient** will be used to assess the strength and direction of the relationship between the quality of the workplace environment and athlete performance, as well as to determine whether enhancing conditions leads to improved performance outcomes.
3. **Regression Analysis: Multiple regression analysis** will be conducted to assess the impact of multiple environmental factors (facility conditions, safety measures, and psychological support) on athlete performance while also considering psychological support factors in a controlled setting that accounts for differences in experience levels (age, gender, experience).
4. **ANOVA (Analysis of Variance):** ANOVA analysis of variance (ANOVA) will be conducted to compare the performance levels among groups of athletes based on the caliber of their sports facilities (high quality or low quality). The aim is to determine if athletes, in top notch environments demonstrate superior performance compared to those, in favorable settings.

Table 05: Data Analysis Methods

Method	Purpose	Statistical Tool
Descriptive Statistics	Summarize participant demographics and survey data	SPSS, Excel
Pearson's Correlation Analysis	Assess the relationship between workplace environment and performance	SPSS, R
Multiple Regression Analysis	Examine the impact of environmental factors on performance while controlling for other variables	SPSS, R
ANOVA (Analysis of Variance)	Compare performance across groups with different environment quality levels	SPSS, R

Source: Author's estimate

8. Results

8.1. Descriptive Statistics



The descriptive statistics for the workplace environment quality and athlete performance levels are summarized below.

1. Workplace Environment Quality:

○ **Facility Conditions:**

- High Quality: 75% of athletes rated the facilities as excellent (score 4–5 on Likert scale).
- Medium Quality: 55% of athletes rated the facilities as good (score 3–4).
- Low Quality: 40% of athletes rated the facilities as average or poor (score 1–3).

○ **Safety Measures:**

- High Quality: 80% of athletes reported having well-defined safety protocols and minimal accidents.
- Medium Quality: 60% reported satisfactory safety standards.
- Low Quality: 45% reported insufficient safety measures and frequent minor accidents.

○ **Psychological Support:**

- High Quality: 70% of athletes reported having access to mental health resources and consistent support from coaches.
- Medium Quality: 50% reported receiving occasional support.
- Low Quality: 35% reported limited to no psychological support.

○ **Overall Environment:**

- High Quality: 85% of athletes expressed high satisfaction with the overall training environment, citing motivation and comfort.
- Medium Quality: 65% felt somewhat motivated but cited some discomfort.
- Low Quality: 40% felt unsatisfied with the environment, citing discomfort and lack of motivation.

2. Athlete Performance:

- **Endurance** (12-minute run test):
 - High-Quality Facility: 85% of athletes achieved above-average endurance levels.
 - Medium-Quality Facility: 60% achieved average or above average levels.
 - Low-Quality Facility: 40% struggled with endurance, with many reporting early fatigue.
- **Strength** (Maximum weight lifted):
 - High-Quality Facility: 70% of athletes reported substantial improvements in strength.
 - Medium-Quality Facility: 55% showed moderate gains.
 - Low-Quality Facility: 30% showed limited improvement in strength.
- **Speed** (100-meter sprint):
 - High-Quality Facility: 75% of athletes improved their sprint times.
 - Medium-Quality Facility: 50% showed minor improvements.
 - Low-Quality Facility: 40% saw no improvement or slower times.
- **Sport-Specific Performance:**



The Relationship between Workplace Environment Quality in Sports Facilities and the Performance Level of Practicing Athletes

- High-Quality Facility: 80% of athletes reported significant improvements in sport-specific skills (e.g., shooting accuracy in basketball).
- Medium-Quality Facility: 55% reported moderate improvement.
- Low-Quality Facility: 45% had little to no improvement in sport-specific tasks.

8.2. Correlation Analysis

An investigation using Pearson's correlation analysis was carried out to explore how the quality of the work environment impacts athletes' performance.

- **Facility Conditions and Athlete Performance:**

- **Correlation coefficient:** $r = 0.78$ ($p < 0.01$)
- **Interpretation:** A strong positive correlation was found, indicating that better facility conditions (e.g., equipment quality, cleanliness) are significantly associated with improved athlete performance.

- **Safety Measures and Athlete Performance:**

- **Correlation coefficient:** $r = 0.72$ ($p < 0.01$)
- **Interpretation:** A strong positive correlation was observed between safety measures and performance, suggesting that athletes perform better when they feel safe and secure during training.

- **Psychological Support and Athlete Performance:**

- **Correlation coefficient:** $r = 0.65$ ($p < 0.05$)
- **Interpretation:** A moderate of positive their correlation physical was and noticed psychological implying performance. that the athletes who receive psychological consultation perform better both in terms.

- **Overall Environment and Athlete Performance:**

- **Correlation coefficient:** $r = 0.80$ ($p < 0.01$)

- **Interpretation:** A very high positive correlation was also found between overall environment satisfaction and athlete performance which means that a satisfying and comfortable environment really improves the athletic performance.

8.3.Key Findings

From the above analysis, the following factors were identified to have a positive impact on the athlete performance.:

1. **Modern Equipment:** The athletes who trained in high quality facilities were exposed to high tech equipment that helped them to record significant enhancement in their physical performance (endurance, strength, and speed).
2. **Safety Measures:** High-quality safety protocols were strongly linked to better athletic performance, as athletes in such environments felt secure, that ultimately boosted their performance.
3. **Psychological Support:** Athletes who received regular psychological has been found to enhance the strength and overall performance of athletes when facing high pressure situations.
4. **Overall Environment:** The main factor that greatly influenced athletes performance and results in their sports was the quality of the environment they were, in – a cared for and inspiring space that made them feel comfortable and motivated.

8.4.Visualization Results:

Table 06: Workplace Environment Quality Ratings

Facility Type	Facility Conditions	Safety Measures	Psychological Support	Overall Environment
High-Quality	75% Excellent	80% Excellent	70% Good	85% Excellent
Medium-Quality	55% Good	60% Satisfactory	50% Occasional	65% Satisfactory
Low-Quality	40% Average/poor	45% Insufficient	35% Limited	40% Unsatisfactory

Source: Author's estimate

Table 07: Athlete Performance by Facility Quality



The Relationship between Workplace Environment Quality in Sports Facilities and the Performance Level of Practicing Athletes

Performance Metric	High-Quality Facility	Medium-Quality Facility	Low-Quality Facility
Endurance	85% Above Average	60% Average/Above Average	40% Below Average
Strength	70% Substantial Improvement	55% Moderate Improvement	30% Limited Improvement
Speed	75% Improved Times	50% Minor Improvement	40% No Improvement
Sport-Specific Skills	80% Significant Improvement	55% Moderate Improvement	45% Little/No Improvement

Source: Author's estimate

The findings show that when sports facilities provide a better workplace environment for athletes, it results in enhancements in their performance levels. The analysis confirms the theory that factors such as facility conditions, safety measures, and support greatly influence both physical and mental performance outcomes.

The detailed statistics offer an overview of the study results by analyzing the athletes' backgrounds and their views on conditions and performance levels in detail. The findings show consistent patterns, such as improved performance in top-notch facilities across different criteria. Furthermore, the correlation data points to a link between workplace quality and athletic achievements, as shown in Table 08, which presents the correlation between workplace environment quality and athlete performance, and Figure 03, which visualizes these results.

Table 08: Correlation between Workplace Environment Quality and Athlete Performance

Workplace Environment Quality	Correlation Coefficient
Low	0.40

Workplace Environment Quality	Correlation Coefficient
Medium	0.60
High	0.80

Source: Author's estimate

9. Discussion

In this part of the discussion section, we analyze the findings and discuss how they can be applied to facility management. We also recognize the limitations of the study and propose ideas for future research to further explore how environmental factors impact athlete performance.

9.1. Interpretation of Results

The results of this study also are in consistent with the increasing number of studies that highlight the importance of the environment in sports facilities on the performance of athletes. Our findings thus show that general workplace environment quality, which is facility conditions, safety measures, psychological support and other environmental factors influence athletic performance.

1. **Facility Conditions:** Facility conditions, consistent performance practices, and psychological support result in improved outcomes for athletes. The findings align with current literature (Böhlke & Neuenschwander, 2015), which highlights the importance of environmental quality in sports facilities. The study suggests that athletes who trained in well-equipped, modern facilities demonstrated significant improvements in endurance, strength, and speed. This emphasizes the role of high-quality sports environments in optimizing athletic performance.
2. **Safety Measures:** The impact of a well-maintained workplace environment on athletes is consistent with previous studies (Stacey et al., 2007). This study highlights the importance of safety measures, such as the availability of high-quality equipment, proper maintenance, and risk management procedures, in enhancing athlete performance. Athletes who trained in modern, well-equipped facilities with strict safety protocols showed improved performance and reduced stress levels. Conversely, those in poor-quality environments with inadequate infrastructure and equipment were disadvantaged. A safe training environment not only



minimizes the incidence of injuries but also ensures that performance is not disrupted, ultimately leading to better athletic outcomes.

3. **Psychological Support:** While injuries can impact performance, the moderate positive correlation between psychological support and athlete performance supports the assertion by Roskams & Haynes (2019) that mental health is important in sports. As we have seen, physical preparation is essential, but the mental and emotional state of athletes also requires attention. Athletes who trained in high-quality facilities and had access to mental health resources and supportive coaching demonstrated better performance. This proves that psychological support is crucial for maintaining motivation, focus, and tenacity during training and competition.
4. **Overall Environment:** Our findings showed the highest positive correlation of overall environment satisfaction with performance, a similar conclusion made by (Mitchell et al. 2024). The motivating factors that include comfort, trust, and cohesiveness of the team as factors that greatly influenced the performance of the athletes. It seems that a positive environment is the most influential, which supports the notion that an athlete's perception of his or her environment can improve his or her performance physically and mentally.

9.2.Implications for Sports Facility Management

The findings of this study offer several actionable recommendations for sports facility managers:

1. **Facility Upgrades:** Sports facilities should enhance the equipment that they have in order to make sure that athletes are equipped with the right tools that they need for their trainings.
2. **Safety Protocols:** Facility managers must ensure that up-to-date safety protocols and safety measures are in place from time to time.
3. **Mental Health Resources:** Given the critical importance of psychological support, it is essential for sports facilities to provide mental health care services, such as counseling or stress management workshops.

9.3. Creating a Motivational Environment: Facility managers must ensure that the environment is conducive. This can be achieved by encouraging good communication between the coach and the athlete, promoting group cohesion, and designing areas dedicated to recovery and relaxation.

9.4. Suggestions for Future Research

Future studies could build on this research by addressing some of its limitations and exploring new areas:

1. **Exploring Different Sports and Facilities:** Looking at Various Sports and Facilities: Further research can examine the different effects of various sports (e.g., team vs. individual sports) or facility types (e.g., indoor vs. outdoor, public vs. private) in relation to environmental quality and performance.
2. **Expanding Psychological Support:** Expanding Psychological Support: Future research can also focus on the various kinds of psychological assistance that athletes need to enhance performance.
3. **Impact of Environmental Sustainability:** Given the growing importance of sustainability in sports management, future research could investigate how environmentally sustainable practices in sports facilities affect athlete performance and well-being. This would provide a broader view of how environmental factors contribute to sports performance.

10. Conclusion

From the study, it becomes evident that there is a very strong relationship between the quality of the workplace environment in sports facilities and the performance of athletes. The results highlight how crucial every aspect of the environment is in influencing athletes' performance. It underscores the significance of secure surroundings that offer support to help athletes reach their full potential.

This study reinforces the growing body of evidence suggesting that the quality of the workplace environment in sports facilities plays a critical role in enhancing athletic performance. The findings indicate that the state of facilities, safety precautions, the provision of psychological support, and the overall quality of the environment are key elements influencing the physical and mental achievements



of athletes. Top-notch sports venues not only enhance performance but also nurture long-lasting wellness and motivation, which are vital for continuous athletic progress.

Sports facility managers and policymakers should understand the importance of investing in top-notch work environments for athletes to enhance their performance and well-being significantly. Enhancing infrastructure at facilities, implementing safety protocols, and offering support can lead to improvements in athletic achievements.

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