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EDITORIAL

International Sports Studies: What's in a name?

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> *What's in a name? That which we call a rose*
> *By any other name would smell as sweet.*
> (William Shakespeare, Romeo and Juliet)

> *'When I use a word', Humpty Dumpty said in rather a scornful tone,*
> *'it means just what I choose it to mean — neither more nor less.'*
> *'The question is,' said Alice, 'whether you can make words mean so many different things.'*
> *'The question is,' said Humpty Dumpty, 'which is to be master — that's all.'*
> (Lewis Carroll, Through the Looking Glass, and What Alice Found There)

Language is the lifeblood of academia, the medium through which ideas are expressed, arguments are built, and knowledge is shared. Yet, the words we choose in academic disciplines are far from neutral—they shape the boundaries of thought, influence perceptions, and ultimately determine how knowledge is received and applied. Reflecting on the language used in academic disciplines is not merely a linguistic exercise; it is a critical enquiry into how disciplines define themselves, interact with the world, and evolve.

Consider how a single term, like "globalisation", carries different connotations in economics, sociology, and cultural studies. In one context, it might signal economic opportunity; in another, it represents cultural homogenisation. This divergence highlights the importance of understanding what words mean and how they frame our understanding of complex phenomena. By reflecting on language, we uncover the assumptions, biases, and power structures embedded within academic discourse.

Moreover, the language of academia is not static; it evolves in response to societal shifts and inter-disciplinary collaborations. For example, inclusive language reflects changing norms and priorities, ensuring that how we discuss issues such as gender, disability, or cultural identity aligns with values of respect and equity. Similarly, as fields such as international sports studies draw on multiple disciplines, their terminology adapts to foster dialogue across diverse perspectives. Reflecting on academic language is an invitation to question the familiar, embrace innovation, and connect with broader audiences. It is a journey into the heart of how knowledge is constructed and shared—an essential undertaking for anyone committed to their discipline's growth, inclusivity, and relevance.

This journal, International Sports Studies (*ISS*), offers what we hope is a clear and welcoming introduction to our interests and scope:

> *International Sports Studies (ISS) is one of the world's oldest and most established scholarly sports journal.*

With its origins dating back to the 1960s, the journal has been a significant force in promoting international and comparative studies of sport worldwide.

We recognise that this brief allows for a wide range of interpretations. This is deliberate, as we, as editors, have always been eager to produce journals with a rich diversity of content and methodologies. Nevertheless, it is helpful to reflect on our assumptions and guiding principles. Therefore, we are using this editorial to explore some possible meanings of international sports studies and some of their extrapolations in this journal. At the same time, we hope to inspire new contributors, especially early career researchers, to join us by submitting their work to our journal.

As an academic field, 'international sports studies' has tended to be understood as a broad, multi-disciplinary academic field that seeks to understand sport as a complex global phenomenon. It recognises that sport is not merely a recreational activity or competitive pursuit but a cultural and social institution with far-reaching implications for individuals, communities, and nations. By adopting a global perspective, *ISS* examines how sport influence and are influenced by historical, cultural, economic, and political processes.

The Scope of International Sports Studies

What does this mean for researchers? Some fields immediately present themselves as central to the interests of *ISS*:

Cultural Perspectives in Sport. *ISS* explores how sport is embedded in and reflects cultural identities and traditions. Topics may include:

- The role of traditional sport and indigenous games in cultural preservation.
- How sport might serve as a medium for expressing national or ethnic pride.
- Cross-cultural exchanges in sport such as football, basketball, and cricket across continents.

Globalisation of Sport. Sport has become a universal language that transcends borders, and *ISS* can investigate:

- Whether global events such as the Olympics and FIFA World Cup promote internationalism.
- The cultural impact of sport brands like Nike or Adidas and the global reach of leagues like the NBA or English Premier League.
- The effects of media and technology on the accessibility and commercialisation of sport worldwide.

Sport and Politics. Sport is a powerful political tool, and there is considerable scope for *ISS* to examine:

- Its use in diplomacy, such as the 'ping-pong' diplomacy between the US and China.
- The role of sport in resisting or reinforcing authoritarian regimes.
- How mega-events in sport project soft power or strengthen political narratives.

Sport Development and Sustainability. *ISS* can explore how sport can contribute to social and economic development:

- Promoting health, education, and gender equality in underserved regions through sport-for-development initiatives.
- Facilitating peacebuilding by utilising sport to foster dialogue, break down barriers, and promote understanding among diverse groups.
- Integrating sport into policies that align with Sustainable Development Goals (SDGs).
- Examining infrastructure development and community impact of hosting major sport events.

Economic Impact of Sport. Sport is a vastly wealthy industry, and *ISS* might examine the following:

- The business of sport, including sponsorships, broadcasting rights, and merchandising.

- The economic effects of sport tourism include hosting the Olympics and World Cups.
- Disparities in resources and financial investments in sports across countries.

Ethics and Integrity in Sport. *ISS* can scrutinise the ethical challenges facing sport, such as:

- The fight against doping and performance-enhancing drugs.
- Establishing and maintaining a safe sport environment where participants can collaborate and develop free from emotional, physical, and sexual abuse or misconduct.
- Corruption and governance issues within international sport organisations such as FIFA.
- Gender inequities in pay, representation, and opportunities in sport.

Health and Well-being. Sport is often presented as a tool for promoting physical and mental health, and *ISS* can focus on:

- The relationship between physical activity and well-being in various cultural contexts.
- Barriers to sport participation, particularly for underrepresented groups.
- The role of adaptive sport in fostering inclusion of individuals with disabilities.

Inclusion and Accessibility. *ISS* can emphasise the importance of making sport equitable and accessible by examining:

- The inclusion of marginalised groups, including women, LGBTQA+ individuals, and people with disabilities.
- Perspectives from underrepresented groups from the Global South and non-WEIRD (Western, Educated, Industrialized, Rich and Democratic) societies
- Policies and practices that promote diversity in sport leadership and participation.
- Case studies of inclusive initiatives, such as Paralympic sport or grassroots programs.

Education and Research in Sport. *ISS* can promote this by highlighting the following:

- Integrating sport studies into higher education curricula.
- Conducting inter-disciplinary research that bridges theory and practice.
- Engaging with sport professionals, policymakers, and educators to translate research findings into actionable strategies.

We are just scratching the surface of this vibrant field. The reader could easily add to our list, and perhaps that will happen organically, anyway, as any comprehensive framework for understanding the intricate connections between sport and society on a global scale evolves with new insights and ideas. We understand the vital role of editors of our journal, *ISS*, in opening the door to alternative perspectives.

Comparative Studies

Our journal has always held a special place for comparative studies. Indeed, such research was an important source of early inspiration for establishing *ISS* (and our associated membership organisation, the *International Society for Comparative Physical Education and Sport* - *ISCPES*). Comparative studies in sport serve as the foundation of *ISS*, offering a lens through which the complexities of the role of sport in different societies can be understood. Scholars have uncovered valuable insights beyond surface-level analysis by examining how countries and cultures approach sport. These studies open doors to understanding the nuances of sport governance, education, participation, and societal impacts, providing a roadmap for identifying best practices, innovative solutions, and adaptive strategies to address universal and local challenges.

Comparative studies in sport are invaluable for understanding how different countries and cultures approach sport, offering insights that transcend single-nation or single-discipline perspectives. By examining variations in policies, governance structures, education systems, and participation rates, these studies uncover best practices and innovative

strategies that can be adapted to address global and local challenges. For instance, exploring how Scandinavian nations integrate public health goals into sport policies or how New Zealand fosters gender equity in sport leadership provides actionable models for other countries. Additionally, comparative research reveals how cultural values shape the societal role of sport, such as Japan's emphasis on discipline and teamwork in youth sport versus the United States' focus on competition and individual achievement. Moreover, comparative studies of sport for development across disaster-prone nations, such as "Sport and Play for Traumatised Children and Youth" in the aftermath of the 2003 disastrous earthquake in Bam, Iran, the "Movement, Games and Sport" for children's psychosocial development in Sri Lanka after the tsunami disaster in 2004, or the 3R (*Re-Play*, *Re-Live*, *Re-Create*), a sport-based psychosocial program in the aftermath of the 2013 super typhoon Haiyan in the Philippines, offer insights on how physical activity, physical education, and sport-based initiatives not only aid in immediate recovery but also contribute to long-term disaster preparedness and social resilience. Knowledge generated from such comparative studies can help researchers and policy-makers design culturally sensitive and effective interventions that align with local needs while drawing on global expertise.

Beyond informing policy and practice, comparative studies in sport are critical in addressing shared global challenges such as doping, environmental sustainability, and inclusivity. By analysing how different nations tackle similar issues, researchers identify strengths and weaknesses in various approaches, fostering the development of more comprehensive solutions. For example, comparative analyses of anti-doping policies highlight variations in enforcement and education that can be harmonised to create more robust systems worldwide. Moreover, these studies promote cross-cultural understanding and collaboration, which is essential for international events, such as the Olympics, where diverse sport systems converge. Ultimately, the value of comparative studies lies in their ability to bridge cultural, political, and economic gaps, fostering a richer and more interconnected understanding of the global sport landscape.

Ultimately, comparative studies in sport are more than a methodological approach—they transform how we understand, govern, and experience sport on a global scale. International sport scholars have uncovered pathways for innovation, collaboration, and progress by analysing differences in policies, practices, and cultural attitudes. These studies challenge assumptions, broaden perspectives, and build bridges between cultures and disciplines, making them a cornerstone of International Sports Studies. Through comparative research, we can address the complexities of sport in a globalised world and provide the tools needed to leverage its potential to foster unity, inclusion, and excellence across societies. In this way, the work of International Sports Studies goes beyond academia, influencing real-world practices and enriching the global sporting landscape for future generations.

From Disciplinary to Multi-disciplinary to Inter-disciplinary Research

The evolution of research and scholarship in International Sports Studies mirrors the increasing complexity of sport as a global phenomenon. Initially, research on international sports studies often adhered to *disciplinary approaches*, in which scholars narrowly focused on specific aspects of sport within their fields of expertise. For example, sociologists have studied sport as a social institution, economists have analysed the financial aspects of sport, and historians have examined the evolution of sport over time. While these approaches generate valuable insights, they often lack the ability to address the multi-faceted

nature of sport, which involves simultaneously interacting with cultural, economic, political, and physiological dimensions.

As the field matured, there was a shift toward *multi-disciplinary methodologies*, in which researchers from different disciplines collaborated to examine sport from multiple perspectives. For instance, a study on the globalisation of sport might involve economists analysing market expansion, anthropologists studying cultural adaptation, and media scholars examining digital broadcasting trends. Although multi-disciplinary approaches have provided broader insights, they often remain fragmented, with little integration of methods or findings. The current trend in International Sports Studies emphasises *inter-disciplinary approaches* beyond merely juxtaposing disciplines to actively integrate theories, methods, and frameworks. This enables researchers to construct a more cohesive understanding of complex issues such as the global economic impact of mega-events or the role of sport in fostering social inclusion across different cultural contexts. By blending expertise, interdisciplinary methodologies in international sports studies facilitate innovative solutions to global challenges, enrich academic discourse, and ensure the relevance of the field to an increasingly interconnected world.

Our journal - International Sports Studies (ISS)

ISS provides a dynamic and inclusive platform for researchers from all backgrounds to share their work and contribute to the growing field of sports studies. The journal is committed to fostering a supportive and welcoming environment, particularly for *early-career researchers* looking to establish themselves in the academic community. Our editorial team actively encourages submissions from new scholars. We provide constructive feedback to help refine and enhance their work, ensuring that their voices are heard and valued in the global discourse on sports studies.

ISS embraces the diversity of research perspectives and welcomes *national and international studies* that explore the multi-faceted role of sport in societies worldwide. Whether examining local grassroots initiatives or global mega-events, *ISS* values contributions that deepen our understanding of sport as a cultural, social, and economic phenomenon. We are also particularly excited to support *new and innovative research approaches* that challenge traditional boundaries and push the field forward. By publishing with *ISS*, researchers join a vibrant and collaborative community dedicated to advancing knowledge and fostering meaningful dialogue in the field of International Sports Studies.

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The Official Journal of the International Society for Comparative Physical Education and Sport

PERSPECTIVE

Does 'What Works' Work? The Quest for the Holy Grail in Physical Education

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Abstract

The 'What Works' agenda within education has become popular for its focus on accountability through data, advancing the aim of developing tangible principles to improve student performance. Nevertheless, this strategy has also been criticised for seeking to define education and missing key social, emotional, and developmental issues, often narrowly. This narrative review attempts to put in perspective the use of the agenda in physical education and to combine evidence to assess its claims and shortcomings. The main conclusions suggest a dilemma in pedagogical practice between paying attention to a narrow definition of students' success in terms of physical fitness and motor skills acquisition and all the other central goals, including individual improvement, societal change, and interest in engaging in physical activity throughout life. This review takes a step towards identifying solutions to various issues in physical education by addressing evidence-based approaches and the need for interdependency with educational aims, improving the effectiveness of physical education towards students' health and well-being.

Introduction: The Rise of the 'What Works' Agenda in Education

> "Until education becomes the kind of profession that reveres evidence, we should not be surprised to find its experts dispensing unproven methods, endlessly flitting from one fad to another. The greatest victims of these fads are the very students who are most at risk." (Carnine, 2000, p. 1)

A qualitative shift in educational research, policy, and practice began in the late 20th and early 21st centuries. The rejection of the over-reliance on subjective professional judgement and an emphasis on evidence-based practices in education has now embraced what is known as the 'What Works' agenda in education research. This movement emerged from growing pressure for greater accountability and transparency in utilising public funds, in this instance, the results produced by the education sector. The 'What Works' language and style of conceptualising education emerged as educators and policy-makers focused more

on practices or strategies that seemed to lead to success. Governments, in turn, came to view this as a means of making education more systematic, reliable, and accountable to the public and policy-makers. (Lingard, 2011).

While 'What Works' was introduced for greater rigour and accountability in educational practices, this has not been without controversy. Addressing its criticisms is essential to developing a more balanced understanding of its impact, particularly in navigating the tension between measurable outcomes and the broader intrinsic goals of education.

This article aims to critically evaluate both the promises and limitations of the 'What Works' agenda, exploring its implications for policy, practice, and the holistic development of learners.

Origins and Key Players

The genesis of the 'What Works' trend in educational practices dates back to the historical advancements in social research and public policy witnessed in the 1960s and the 1970s, when the concepts of evidence-based practices started spreading in different areas such as healthcare, criminal justice, and social work (Oakley, 2000). In such fields, applying science was an attempt to determine the methods that would produce the most favourable results. As early as the 1990s, such rhetoric concerning education was developing, notably in the US and UK, where there was an emphasis on improving the education system and its output on a national scale (Slavin 2002).

The movement was profoundly shaped by prominent individuals and groups seeking to foster empirical educational research. Within the USA, the Institute of Education Sciences (IES), established in 2002 as part of the US Department of Education, became instrumental in setting benchmarks for educational research which emphasised the use of randomised controlled trials (RCTs) and other experimental methods to assess the impact of the prevalence of educational initiatives (Coalition for Evidence-Based Policy, 2002). The objective of the IES was to create a strong base for rigorous studies that would inform education policies and practices, and the organisation's emphasis on 'scientifically based research' became one of the hallmarks of the 'What Works' movement in education in North America.

Various governmental reports and programmes have fuelled the search for evidence-based education in the UK. The establishment of the 'Evidence for Policy and Practice Information and Coordinating Centre (EPPI-Centre) at the University of London became influential, and it was recommended that systematic reviews of various educational research be carried out to guide policies (Oakley et al., 2005). Around the same time, the Office for Standards in Education, Children's Services, and Skills (Ofsted) implemented a new inspection framework emphasising evidence-based criteria to enhance accountability in the British educational system (Baxter and Clarke, 2013). Nowadays, for instance, the UK explicitly aims to be a world leader in pursuing evidence on 'What Works' (HM Government, 2023).

Robert Slavin (in the US) and David Hargreaves (in the UK) became well-known advocates who have played an important role in promoting the improvement agenda, the so-called 'What Works' agenda. In cooperative learning, Slavin's work stems from the extensive use of RCTs, which he considered necessary to corroborate educational interventions. For instance, treatments are scientifically tested and proven effective in medicine, and only then are they put into practice (Slavin 2008). Hargreaves also advocated evidence-based approaches. He argued that, as a matter of principle, evidence should dictate practices that cause students to learn. He stated that nothing about education can be redefined or is sacred; therefore, when making pedagogical

choices, the practices taught are grounded in sound evidence (Hargreaves, 1996).

Why 'What Works' Emerged: Accountability and Efficiency

The increasing popularity of 'What Works' in education requires explanation, and this logic can be constructed based on several factors. From the second half of the 20th Century, public and governmental agencies started to call for more efficiency and effectiveness in applying financing and spending, and education, as one of the significant cost centres, was in the spotlight. In the US and UK, dissatisfaction with students' achievements, particularly in the context of their international counterparts testing students through the Programme for International Student Assessment (PISA), created an urgency to reform the educational system (OECD, 2004). Furthermore, improving educational outcomes, providing equal opportunities for all students, and effectively appropriating public expenditure constituted a demand for evidence-based educational policy and practice (Lingard, 2011).

The inefficiencies of traditional education systems, often based on history, professional judgement, or personal experience rather than systematic evidence, have driven the rise of the 'What Works' agenda. Policy-makers began questioning whether long-standing practices were effective or necessary, particularly those intended for replication (Slavin, 2008). There has also been the application of scientific methods to social science problems in the form of RCTs and longitudinal studies, which aimed to find global best practices that could be implemented in all schools, increasing educational achievement across a wider context.

Simultaneously, the development of information technology has made it possible to manage and analyse educational data more efficiently, enabling researchers and policy-makers to monitor and evaluate educational outcomes like never before. This approach has led to the creation of extensive educational databases and longitudinal studies to identify effective teaching and policy strategies. Therefore, the intersection of policy imperatives, technological advancements, and data availability created the conditions where the 'What Works' ideology thrived and broadened the definition and the approach to achieving educational outcomes (Davies, 1999; OECD, 2004).

The Promises and Appeal of 'What Works'

According to the proponents of 'What Works', this agenda is useful in ensuring clarity and rigour in education since it focuses on identifying and documenting certain practices that can always be relied upon to improve student outcomes. Proponents argue that evidence-based practices eliminate speculation by replacing personal intuition and anecdotal evidence with data-driven decisions (Alexander, 2008). This approach aims to make educational systems more reliable by implementing proven practices to improve student outcomes.

Another attraction of the 'What Works' model is its promise of effectiveness. By identifying and implementing strategies that will help improve student outcomes, the 'What Works' agenda directly discusses how educational resources can be put to the best use. This efficiency thesis particularly appeals to makers of policy resources already in short supply, suggesting how the social rate of return on education expenditures will be maximised. Finally, the 'What Works' approach is clear and emphasises the replicability of outcomes, making the model consistent with accountability models emerging in public services. The latter becomes more important as the delivery of results becomes mandatory (Ball, 2003).

Educational Policy and the Institutionalisation of 'What Works'

The prioritisation of evidence-based practices is now fully integrated into policies and practices, particularly in the case of the Western world. Teachers are instructed to employ teaching methods that align with the prevailing norms of demonstrable and replicable success. The available resources for research and the adoption of effective practices have followed such changes in the direction of policies. A paradigm shift in the understanding of how educators should go about their craft is evident from policies that encourage or attempt to breach educators' prerogatives and impose certain approaches on them that have been validated through research (Davies, 1999; OECD, 2004).

Meanwhile, this movement has spread across many US and UK systems, where standards and accountability often drove reforms. Education researchers and policy-makers felt the influence of professions, such as medicine, which was ready to demonstrate that evidence-based approaches worked and made sense. The rationale for these changes was that education could learn from other professions since it was inefficient. Prominent policies such as the 'No Child Left Behind Act' (2001) in the US and the 'National Literacy Strategy' (1997) in the UK implemented the 'What Works' policy and established indicators that made educational success synonymous with academic achievement (Lingard, 2011; Slavin, 2008).

There is a particular risk of over-simplifying or generalising across regions and students as one modifies social problems with regard to modernist solutions, such as the 'What Works' approach. Pulling out a common schema across different practices is appealing and effective. Education systems are under unrelenting pressure to produce fair outcomes across students from different settings, even if they entail modifying variables, such as the inputs provided, where there are clear constraints, such as the school or community. Unsurprisingly, Lingard (2011) noted that this reliability has become especially appealing in a globalised world.

The central idea of the 'What Works' attitude is the introduction of the measurable results quantification paradigm in the educational sector. This shift has been transformational in curriculum methodology, teacher education, and distribution of resources within institutions. Currently, educational policy documents tend to focus on measuring learning results. The contents and methods of instruction are often framed in the context of particular competencies, such as literacy or numeracy, critical thinking, or generalisation, which are improved through effective practices (Slavin, 2008). Proponents claim that, by making such decisions based on systematic evidence, schools may minimise variability in student performance and concentrate on strategies that have demonstrated results. Such an orientation makes it possible for teachers and administrators to have a systematic approach to enhancing pupil performance to reduce differences likely to be caused by the social or academic background of the students (Davies, 1999; Gorard, 2020).

The 'What Works' agenda has also become especially attractive, as it fits into the context of accountability policies, which require schools and teachers to show progress in distinct and measurable results. Accountability has become a central concern in education, with mechanisms designed to prevent resource mismanagement and prioritise student outcomes as measures of institutional effectiveness. 'What Works' is appealing because it relies on measurable, evidence-based strategies demonstrating tangible improvements (Ball, 2003). This relationship with accountability measures is also popular with the public and governments because it can be seen as progress in education and provides the basis

for the expenditure of certain funds in implementing specific educational programmes or policies. They do this as they strongly believe in transparency and accountability in their work processes and outputs. In particular, they intend to demonstrate that the approach to schooling is as evidence-based and rigorous as medicine or engineering and that any new practice is only adopted after the most stringent tests. Focusing on scientifically based and testable approaches, the 'What Works' perspective emphasises how things work within education and how institutions improve over time. Such an emphasis on systems thinking (ST) is also gaining traction in public policymaking, including the necessity for evidence-based policy, which has been in vogue for some time. Using evidence-based methods, educational systems seek to avoid guesswork and intuition and instead focus on outcomes that can be replicated in different contexts (Coe & Kime, 2019). Traditional responses to improve education outcomes that take a 'piecemeal' approach may have some success but are unlikely to solve the 'wicked problems' that education systems face worldwide. ST offers a glimpse of a different future and may help policy-makers accomplish faster and more sustained progress in education, resulting in broad outcomes for current and future generations (Ndaruhutse et al., 2019).

In the end, the 'What Works' paradigm is designed to help teachers, administrators or policy-makers in the quest to enhance their educational outcomes by reliable means. This allows schools to take the right administrative actions that cut costs without compromising educational quality and effectiveness in terms of results. Supporters maintain that such reliance on evidence is beneficial because it enhances the credibility of the educational system in general and of educators, particularly those who, as other professionals, are ready to improve their practices for the benefit of students (Slavin, 2008). Such an argument has contributed to positioning the 'What Works' approach in mainstream education policy, with growing acceptance appealing to all wanting to improve education through research.

Detractors accept that while the focus on 'What Works' makes such an agenda more robust and consistent, it also encourages narrowing education to a technical, instrumental process that fails to consider broader educational aspirations. Educational theorists such as Biesta (2010) and Pring (2004) believe that education should not be reduced to quantifiable outputs, as this would mean it is devoid of ethical, philosophical, and developmental aspects. According to Biesta (2007), education is about making students economically effective and empowering them towards growth, active participation in a democratic system, and critical reflexivity. According to Pring (2004), educational engagement with what is measurable poses a danger to critical human beings. These critics argue that education must not only focus on 'What Works' and that an evaluation of 'what is worthwhile' is required. Hence, the model must incorporate the intrinsic values and aims of education. These critics say that because the objective of the 'What Works' perspective is to ignore these underlying themes, all other objectives are regarded as secondary and in reality.

Criticisms of 'What Works' in General Education

Critics argue that emphasis on measurable outcomes neglects the ethical, philosophical, and developmental dimensions of learning. As educational theorists observe, the issue of education is not simply a polity or policy matter, nor about knowledge transfer, but a normative and transformational process of learning to have values, character and think critically (Biesta, 2010; see also Dekker & Meeter, 2022 and Thiedig, 2023). According to this view, education should ask 'What Works' and 'what is worthwhile'. From this perspective, education should develop well-

rounded people capable of critical, ethical, and civic commitment rather than just being knowledgeable about performing a set task. Biesta (2007) argues that the obsession with worded outcomes of education is detrimental as it encourages a technocratic class of teachers and students, where the measure of success is only determined by how well the task is achieved or replicated and not what impact it has on the person completing the task. According to Biesta (2010), learning is not reduced to obtaining a set of competencies or fulfilling an academic goal; instead, it is a learning process that allows the individual to form autonomous thinking and ethical judgement, especially in a world that is becoming more complex and interdependent. Similarly, Pring (2004) maintains that educational goals should not only be reduced to developing skills. These are merely instruments of doing whose purposes are much broader in nurturing socio-political commitment and living a personally responsible and moral life.

According to these critics, an over-emphasis of education on 'What Works' endangers achieving such aims and purposes, which are value-oriented and necessary for education as an institution, which may make students less able to make meaningful contributions to their communities. However, this approach is not without its criticism. One is that teachers employ universal teaching strategies. These constraints are seen as detrimental to teachers' independence and agency. It is argued that this standardisation practice is a disservice to the conceptualisation of teachers as professionals and creative individuals who can drive the needs of a diverse classroom and create a constructive yet positive sense of learning. Teachers should not only be regarded as machines who come to class to teach students concepts and go home but also as leaders who guide and shape a child's development (Hargreaves, 1996).

Critics also point out that an excessive focus on standardisation may have an adverse effect in which students are viewed instrumentally as end products that can be optimised rather than as people who need nurturing as they grow. The 'What Works' strategy risks depersonalising education by overlooking its relational and human aspects. In this model, learners risk becoming passive recipients of skills and knowledge rather than active participants in their education. This viewpoint can transform education into a business in which the end product or output the students seek must be in terms of achievements instead of the student's potential and identities (Biesta, 2007). They argue that this model ignores the need to develop natural, internal, or intrinsic motivation, explore or be curious, and even the emotional perspective needed to nurture a passion for education and self-empowerment.

A further criticism is that the 'What Works' agenda emphasises efficiency and outcomes and less on learning processes. Being concerned only with what can be measured, this approach may omit essential elements and intricacies of educational advancement. For instance, Pring (2004) posits that it is not feasible to regard educational processes as mere input-output models because they comprise a complicated web of sometimes undetermined relationships among teachers, students, and curriculum content. The 'What Works' model's reductionism creates a situation whereby the predominant understanding of learning is overly narrowed to acquiring some skills or information, neglecting education's broader cognitive, moral, and social purposes. For example, although empathy, resilience, and ethical understanding are important for a holistic education, they are difficult to measure. As such, potential students' critics worry that the 'What Works' strategy may not create well-rounded individuals because it ignores these more challenging aspects to describe.

Equity concerns have also been raised because of the nature of the data sources

used, which are largely quantitative and standardised. It has been suggested that the ‘What Works’ paradigm may further entrench inequalities since it largely prefers circumstances and results readily measured and compared across various other contexts (Lingard 2011). As an illustration, expect schools with limited resources to seek ways of achieving standardised tests, which will be detrimental in the context of target-based performance assessment. This may also adversely affect students from the periphery, who may require more focused and contextual interventions than generic approaches. However, an emphasis on a standard set of measures has been seen to prevent the focus from the essential problems confronting various types of schools and communities. Thus, the ‘What Works’ approach can be expected to worsen educational disparities instead of resolving them (Alexander, 2008). Such proponents believe that if ‘What Works’ principles are applied uncritically, this could lead to structural inequalities in education, in which social mobility and social justice will be compromised.

Finally, critics fault the ‘What Works’ approach for its reductionism, which oversimplifies the complexities of education.". While critics point out that these quantitative data are useful, it is worth noting that an overemphasis on such quantifiable things makes people mislay on other important aspects that are difficult to assess using traditional metrics. Apart from mere information, education also includes attitudes, belief systems, and social skills that are less likely to be verifiable through numbers (Pring, 2004). In its pursuit of effectiveness, the ‘What Works’ policy risks prioritising measurable outcomes over the deeper, transformative aspects of education. This concern resonates with Hargreaves’s (1996) view that it is necessary to pay attention to the ‘whatever is taken for granted in learning settings’ aspect or ‘hidden curriculum’- the unspoken and unwritten information boundaries that pupils manage to acquire through their socialisation, emotional life and culture. This is a concern when these may be deemed soft, core to authentic learning, and should not be traded off for complex values.

In a nutshell, however, what some laud as strength – the focus on hardcore measures and assessable results to gauge the success of any programme – has its detractors as well, who could be called critics of the ‘What Works’ strategy. The contention is that such a single-minded approach will promote a reductionist view of education as an exercise in some mechanistic exchanges or management completely divorced from human emotions. They argue that such pressures lead to a perversion of the “What Works” ideology, which is meant to perfect the educational learning experience, as it is critical to furnish students with the skills and capabilities for viable citizenship. They argue for an alternative model that respects qualitative perspectives and the independence of classroom practitioners and out-of-school children and, therefore, practices education as an evolving enterprise that helps people aspire to achieve much greater socio-personal goals.

The Influence of ‘What Works’ on Physical Education

Regarding physical education (PE), good examples of the ‘What Works’ movement are systematic reviews and meta-analyses, which contribute to establishing a ‘What Works’ approach. As for the introductory course of PE, the metrics-driven approach of measuring fitness, motor, and physical competence aligns with international accountability policy in the education sector. However, despite the benefits of systematic reviews and similar processes in structuring PE as a field, there has been a notable absence of debate around the 'What Works' ideology. The policy area does not appear to involve pioneer institutions and enduring controversies regarding evidence-based arguments and policies. The lack of engagement has led to PE being moulded

by external forces, whereby what is important seemed to be dictated through systematic reviews. Consequently, there is always an argument of conflict with the deployment and use of PE development standards and policies and enhancing the core purpose and primary objectives of PE, such as increased social interaction, personal development, and an overall appreciation for physical activity (PA) (Penney, 2013; Macdonald, 2013).

The advent of the 'What Works' agenda has critically influenced the focus on policies in PE, particularly stressing the importance of fitness, motor skills, and general physical competence. This is consistent with an approach in which achievement and measurements fit into the current intensified concerns with accountability and evidence-based practices. This trend is consistent with growing pressures in the educational sector for precision and uniformity of outcomes and measures but is also visible in other fields (Lingard, 2011; Macdonald, 2013). Although the attention directed towards fitness levels and motor abilities is consistent with the accountability focus of the 'What Works' agenda, it may overly restrict the goals of physical education to its essential constituents. Emphasis on quantifiable goals, for instance, outcomes and qualifying levels, often leads to insensitivity to the relational, social, and emotional aspects of learning. Many would argue, we think, that the goal of PE is not only to promote ideal engagement in physical activities but also to engender a sustained interest in active lifestyles (Bailey, 2020). In addition, there is a real possibility that over-dependence on standardised instruments may discourage and thus exclude students who are outside the conventional level of sporting ability and create an environment which is unfriendly to lesser sporting people (Penney, 2013). The over-emphasis on objective outcomes, particularly in physical education, may unintentionally lead to valuing quick wins at the expense of individual and social growth in the long run and, in so doing, ignore the immense potential of physical education in shaping well-balanced, self-assured, and socially competent citizens.

Formalised assessment tools have become a fundamental feature of PE programmes because they allow for orderly approaches to measuring physical abilities and improvements in students over time. Most motor skill tests and standardised fitness tests evaluate skills such as endurance, power, and mobility and emphasise different dimensions of physical development in children, regardless of school. Such incorporation of standardised tools enhances the alignment of PE with an evidence-based approach that emphasises the use of strategies to improve the population's physical abilities and health (Bailey, 2006). Proponents of this approach maintain that establishing timetables for PE based on scientific procedures orientates the subject to the same level of precision and accountability as other curricula. This perspective reinforces its role as a worthwhile subject, leading to advantageous outcomes for learners (Alexander, 2008; Kirk, 2010).

The focus on physical health and competence shares commonality with increasing scientific literacy within the educational framework, as expressed through PE. In the same vein, with the advent of education systems, PE has increased and emphasised achievements such as improving cardiovascular fitness, motor coordination, and strength, all of which indicate the programme's success. These parameters guarantee uniformity and consistency, thus making it possible for all education providers to ensure that learners receive the same level of education in physically competent activities. Life skill proficiency and most national fitness tests provide cut-off points that teachers can use to measure students and guide their teaching and the education they intend to have (Williams & Lacy, 2018).

Physical educators who aim for ‘What Works’ point out that this approach increases the domain's authority by showing distinct and scientifically supported outcomes. As childhood inactivity and obesity are pressing problems worldwide, advocates claim that PE properly addresses student health and development in a measurable and recordable manner (Bailey, 2006; Blair & Cheng, 2018). Evidence-based PE methods explicitly aim to enhance physical skills, health, and other educational policies that emphasise effectiveness and targeted outcomes (Penney, 2013; Whitehead, 2010).

The performance evaluation approach has also attracted the attention of policy-makers and administrators, who seek straightforward and dependable methods for assessing the impact of education. As PE seeks uniformity of purpose and approaches, it fits into the data-oriented education approach, which emphasises the need for evidence of improvement (Lingard, 2011). This means that PE stands to benefit from expressing its inputs through quantitative outputs, which are part of the accountability culture dictated by educational policy. For instance, improvements in physical abilities and fitness gained through effective PE instruction count towards schools’ obligations to demonstrate programme effectiveness and the efficient utilisation of resources (Macdonald, 2013; Whitehead, 2010).

The movement in the centre of gravitation towards metrics may differ from the idea of a holistic, personal-centred, and thus custom-made development that is rarely associated with PE. Nonetheless, the focus on empirical, observable, and study-results-based outcomes has anchored PE in contemporary education. In addition, the ‘What Works’ approach provides impetus towards a consistent structure-led evidence orientation that enhances students' academic performance by addressing their physical and mental health (Blair & Cheng, 2018).

Connecting 'What Works' in Physical Education Research to Theory and Practice

In education, the question of "What Works" ultimately comes down to using evidence-based practices linked to existing theories such as constructivism, behaviourism, and social learning theory. Such instructional theories help understand how students learn and retain knowledge more effectively. One example is constructivism, which encourages learning through active engagement and activation of prior knowledge and has been successful for years in creating meaningful and long-lasting experiences (O’Connor, 2022). Behaviourism provides strategies for managing the class and, ideally, rewards positive actions by giving order to the learning environment (Hinduja, 2021). Social Learning Theory demonstrates how observational learning stems from peer interaction, reminding us that students constantly imitate the behaviours and attitudes they see in their peers and teachers (Rumjaun & Narod, 2020).

While these main theories underpin the discipline of PE, they have particular adaptations due to the nature of physical experience and learning. Students build motor skills and acquire cooperative behaviours through observation and mimicry, so Social Learning Theory is particularly relevant for PE (Rumjaun & Narod, 2020). The hands-on experiential learning principles associated with constructivism manifest in task-oriented activities with a strong element of exploration movement and skill practice, predominantly in a physical environment based on concepts formed in previous learning experiences (Dalkiran et al., 2020). Furthermore, Self-Determination Theory, which focuses on autonomy and competence, relates specifically to PE as students are more likely to engage in physical activity and adhere when they feel

a sense of independence and accomplishment (White et al.,2021). Integrating these theoretical learnings into practical content, PE can facilitate a more engaging, inclusive, and practically functional classroom that respects the recruitment of specialised learning processes within this domain as a stage for both skill development and broader life preparation.

Criticisms of 'What Works' in Physical Education

Experiencing or engaging in the 'What Works' agenda in PE has also drawn challenges. Although the emphasis on fitness and motor competence integrates PE in the larger accountability framework, it is believed to be a threat to the conventional view of PE, which is more than just encouraging these skills, as it also includes social, emotional, and motivational aspects. It has also been argued that in pursuing these standardised targets and technical skills, PE may just become a transfer of motor skills, which may not be very helpful in personal and social development. The inculcation of this target results in a reduction in the PE view to be target-orientated, meaning fitness targets rather than the development of appreciation towards PA (Houser & Kriellaars, 2023).

It has become increasingly claimed that 'physical literacy' can and should serve as an adequate measure for PE, although this is highly debated (Bailey, 2020). Whitehead's definition of physical literacy incorporates more than just the physical aspect; it includes the elements of motivation, confidence, and even cognitive engagement, intending to appreciate movement for a lifetime, which is positive. It is concerned with immersing PE students from learning motor techniques only to broader objectives centring on a person's development. However, Bailey (2020) views the application of physical literacy as rhetorically useful but virtually impossible to implement in practice. A more complex view of physical literacy would make it difficult to define it within an accountability paradigm, thus making it difficult to contextualise it within evidence-based education models.

Some physical educators are worried about the possible neglect of PA per se in favour of fitness and motor skill improvement in the 'What Works' approach. Like many other authors, Kretchmar (2000) emphasises that such a relationship should be established when students appreciate PA as something that can and should be done for the pleasure of it, not as a chore or an obligation. Kretchmar argues for an approach focused on "joy-oriented" development when play, search, and movement are the goals of education and are important in a broader educational context. Their criticism rests on the notion that by concentrating only on fitness and skill measures, teachers would estrange students who do not conform to the typical images of athletes, creating an environment centred on performance, which may hinder many students' participation (Oliver & Kirk, 2016). According to these critics, educators should strive to build students' physical capabilities, strengthen their emotional and social well-being, and foster feelings of cohesiveness and connectedness.

Another significant concern is the inflexibility of the 'What Works' method, which is central to PE. Most scholars agree that rigid, standardised learning cannot accommodate students' diverse abilities and interests (Macdonald, 2013). Since PE is based on socially and politically accepted norms, the focus on standardised assessment makes PE run the risk of not applying to a large group of students. Other educators have also opposed such models, as they may push students into aggression and competition on strategies to achieve certain goals and become more averse to physical engagement. Proponents of physical literacy, such as Whitehead (2010), have focused on such goals and have suggested broadening the vision to include motivation, confidence, and

personal involvement. In their view, true inclusiveness in PE requires engagement and variability, allowing teachers to respond to their practice in the specific context of their students. For Penney (2013), this position influences individualistic flexibility, which is the opposite of standardisation.

To sum up, critics of the 'What Works' move into PE suggest focusing on fitness and motor skills in PE might benefit systems and measurement of teachers, but it could limit the educational breadth of concepts within PE. They say that, with a focus on quantifiable objectives, PE will likely focus on the technical aspects of skill development and lose sight of the social, emotional, and motivational factors that enrich students' lives and inspire lifelong involvement in PA. Supporters of the broader view say that PE must be flexible, adaptable, and personalised, emphasising creativity and self-expression.

Rapprochement: Balancing Evidence-Based Practice with Holistic Goals

To minimise the impact of the criticisms recapped above, some scholars have taken a more moderate view to combine the best of the two halves of the 'What Works' model with the values usually associated with education in its broad sense. It aims to provide students with technical skills while addressing their social and emotional aspects. One such influential model is the Teaching Personal and Social Responsibility (TPSR) model developed by Hellison (2011). According to TPSR, physical skills are complemented with morals, such as caring and discipline, among other values. TPSR is also a curriculum framework aimed at helping teachers improve students' physical skills within educational values and ethical goals. This illustrates how PE teachers, when achieving ethical goals, develop moral values in their students by shaping their physical abilities. This PE model is undemocratic and highly stressful, and its main priority is educational value rather than violence.

Another successful strategy for reconciling the empirical and more holistic approaches in PE is mixed-methods research. This method presents a more comprehensive view of student participation in PE by focusing on quantitative statistics regarding students' physical capabilities and qualitative dimensions of their self and social aspects. This strategy upholds the empirical rigour behind defining the 'What Works' approach; it presents evidence of quantifiable results while accepting the intricacies of educational processes, which could be difficult to assess through standard metrics. For instance, student interviews, reflective journals, and observational data help provide PE's emotional and social aspects beyond mere technical competencies (Durden-Myers & Whitehead, 2018). In this context, the mixed method enables PE teachers and researchers to appreciate and uphold the multi-faceted nature of the learning process in PE so that skills and experiences are promoted.

The conception of PE as an active field of education lies in the professional autonomy and flexibility of the teachers. Many scholars argue that teachers should have the professional discretion to shift their focus to individual students' needs, interests, and backgrounds. Only by giving autonomy to teachers who exercise professional judgement can schools have a directive PE curriculum that processes evidential targets and advocates for a holistic and individualised integration of learning. This type of autonomy helps teachers incorporate evidence-based practices without loss of flexibility so that a supportive climate is created in which students are appreciated as unique individuals. Therefore, such an approach motivates students to have a healthy and active lifestyle throughout their lives aside from feeling competent and having a sense

of self that fosters attachment (Penney, 2013).

Conclusion

The 'What Works' agenda has brought significant advances in evidence-based practice, ensuring greater accountability and consistency in educational outcomes. However, its emphasis on measurable results risks narrowing the scope of education and overlooking the essential social, emotional, and developmental aspects. To achieve a meaningful balance, educational systems should integrate evidence-based practices with holistic approaches that prioritise creativity, autonomy, and the development of well-rounded individuals. This balanced perspective would improve measurable outcomes and foster lifelong learning, critical thinking, and personal growth, aligning education with its broader societal and ethical goals.

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PERSPECTIVE

Sport and Geography: Exploring their Mutual Influence on Geographical Dynamics

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Abstract

Sport and geography are intrinsically connected, influencing and shaping each other bidirectionally. Drawing on interdisciplinary perspectives, this narrative review examined how natural geographical factors —such as terrain, climate, and elevation— affect sport participation and athletic performance. It also explored the role of human-made geographical features, including sport stadiums, arenas, and facilities, in developing sport organisations and fostering community development at various scales. The review further investigated how sport, as a global industry, transforms geographical landscapes, reflecting and reinforcing political, economic, and cultural power dynamics. The analysis of major sporting events demonstrated their profound impact on host cities and regions, including urban development, infrastructure projects, and environmental changes. The paper concluded by emphasising the significance of this reciprocal relationship between sport and geography, highlighting the potential to develop sustainable programmes and policies that enhance collective well-being and encourage collaborative approaches between the two fields.

Keywords:
good health and well-being, sustainable cities and communities, responsible consumption and production, climate action, partnership for goals

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Introduction

The convergence of sport and geography unveils a dynamic interplay that influences both the physical landscape and the cultural fabric of societies worldwide. Sport refers to participation in activities involving physical exertion and skill, often in a competitive context, regulated by a set of rules or customs (Oxford English Dictionary, n.d.). On the other hand, geography is broadly understood as the study of the earth's surface and the spaces inhabited by human populations, focusing on the complex relationships between people and their surroundings (Tran et al., 2017). Both sport and geography fundamentally centre on interactions between the environment and human activity, highlighting the importance of spatial and physical elements in shaping human experiences. Since the seminal work of Burley in 1966, the recognition of sport geography as a subject of academic inquiry has grown, acknowledging its economic, social, and cultural significance, as well as its impact on urban land use. This acknowledgement marks the genesis of a new

paradigm, where the study of sport emerged as a distinct and increasingly relevant field within geography (Wise & Kohe, 2018).

Over time, sport geography has evolved into a comprehensive subject matter that integrates geographical concepts such as space and place with studying sport phenomena. Understanding the importance of space and place is crucial in defining sport and gaining a better appreciation of its significance. Even though sport geography has a long history originating in the late 1800s and early 1900s, it was officially acknowledged only recently, as evidenced in scholarly works such as the Dictionary of Human Geography (Rogers et al., 2013). The emergence of the cultural turn in applied human geography further propelled the development of critical studies within sport geography, focusing on issues of race, gender, class, and spatial dynamics (Gaffney, 2013a). Indeed, sport is inherently geographic, as games and competitions unfold within specific locations bounded by space and time. Understanding the geographical dimensions of sport provides valuable insights into how human activities intersect with the natural and built environment, shaping landscapes, communities, and cultural identities.

Sport as an Inherently Geographic Phenomenon

Sport is inherently geographic as it occurs in specific spaces, each with unique spatial configurations, environmental conditions, and social meanings that shape the nature of sport activities. Moreover, sport activities influence and are influenced by geographic contexts, as they foster connections to local culture, alter land use, and drive economic and social dynamics within their surrounding environments. Several key concepts illustrate this claim:

Place

Sport events are rooted in specific locations that hold cultural and social significance, embedding sport deeply within local identity (Lee et al., 2016). A city's identity might be closely tied to its local sport teams, where team symbols, colours, and histories become part of its collective memory and pride, fostering a shared sense of belonging among its residents. Iconic sport venues, such as stadiums and arenas, transcend their function as physical sites for competition; they become landmarks that attract tourism, support local businesses, and serve as gathering spaces, contributing to the city's landscape and reinforcing its identity as a "home" for both residents and fans alike (Bale, 2003).

Space

The spatial arrangement of sport facilities plays a significant role in shaping urban landscapes, as the placement and design of these structures affect multiple aspects of city life. For instance, large stadiums and arenas in urban centres can increase traffic congestion on event days, necessitating specific traffic management and public transportation adjustments to accommodate high visitor volumes. Furthermore, these facilities stimulate economic activity in surrounding areas, attracting businesses such as restaurants and community events, which can influence the development of neighbourhoods (Shen et al., 2020).

Environment

The natural environment fundamentally determines the types of sport that can be played in a given region, as geographical features create unique opportunities and limitations for recreational activities (Hall & Page, 2014; McCullough, 2023). For instance, the elevation and terrain in mountainous areas might favour winter sport like skiing and snowboarding. At the same time, trails and natural obstacles attract hiking and climbing, making these sport central to the region's culture and economy. Similarly, coastal areas provide natural settings for water sport such as surfing, sailing and beach

volleyball. The local climate and weather patterns further define when these activities are ideally pursued, leading to seasonal tourism peaks and shaping the infrastructures around these natural assets (Hallmann & Feiler, 2014).

Understanding these geographical dimensions of sport provides valuable insights into how human activities intersect with the natural and built environment, shaping landscapes, communities, and cultural identities. By examining these aspects, sport geography provides a comprehensive understanding of the complex interplay between sport and geography, highlighting the significance of spatial and environmental factors in shaping sport and their broader social and cultural implications. This narrative review explored the reciprocal relationship between sport and geography to reveal how they mutually influence each other and shape geographical dynamics. Through an interdisciplinary analysis, it aimed to uncover the intricate dynamics that define this interplay. By delving deep into the complex interactions between sport and geography, it sought to shed light on the diverse manifestations of their intersection and their profound impact on the world we inhabit.

Theoretical Perspectives

This review drew on several theories to articulate the intersection of sport and geography and its significance to knowledge generation. These theoretical frameworks provide a multidimensional understanding of how sports and geography mutually influence one another, offering valuable perspectives for interdisciplinary research and policy-making.

Spatial Theory

This theory offers a lens for analysing how spaces are created, experienced and understood (Mazúr, E., & Urbánek, 1983). From the sport geography perspective, the spatial theory helps illuminate the physical arrangement of sport facilities, from local gyms to international stadiums, revealing how these structures are strategically placed to meet the community's needs, enhance accessibility, or signify status and investment in sport culture. Furthermore, spatial theory sheds light on the distribution and availability of sporting activities, highlighting patterns of inclusion or exclusion, as well as examining how individuals and communities engage with sport spaces, from local enthusiasts and fans, shaping a shared place and belonging through their regular participation and presence (Davies, 2016; Salimi, 2024; Kinkaid, 2020).

Place Theory

Place theory focuses on the social and cultural importance of specific locations, examining how meaning and identities are formed through human experiences and activities within those spaces (Cresswell, 2014). This theory provides the lens for understanding how particular locations gain significance through sport, how sport, in turn, contributes to place-making, and how the identity of such locations relates to sporting functions. Through place-making processes, sport can turn a stadium, park, or even a neighbourhood into a site of shared identity and pride as fans, athletes, and communities ascribe collective memories, traditions, and emotional connections to these spaces, intertwining the physical landscape with the cultural identity and history of the region (Geffroy, 2016; McClinchey, 2022; Perkins & Thorns, 2017).

Human-Environment Interaction

This perspective centres on the interdependence between humans and their surroundings, recognising how each influences and shapes the other over time (Moran & Brondízio, 2012). In sport geography, this approach is valuable for understanding how the natural environment and climate conditions dictate the types of

sport commonly practised in a region, such as mountain sport in alpine areas or surfing in coastal zones, thereby highlighting the environment's role in shaping the sporting scenario (McCullough, 2023). Additionally, it allows for analysis of the effect of sport on the environment, such as erosion from hiking trails or ecological disruption from large sport facilities, and conversely, how environmental changes—like climate shifts or land degradation—affect the viability and seasonality of sport, as well as the changes in the environment and its effects on the sport, prompting adaptations in sporting practices and policies (Dong, 2018; De Oca, 2018; Dai & Menhas, 2020)

Cultural Geography

Cultural geography deals with how culture, in terms of practice and belief, is situated in space (Anderson, 2021). In sport geography, this framework is especially helpful in understanding how sport mirror or produce cultural identities and social norms, revealing how athletic practices and preferences can serve as symbols of local and national identity, pride and heritage. It also provides insight into how cultural beliefs impact who participates in sport and under what conditions, as well as how sport events, rituals, and icons manifest and propagate cultural ideals, creating spaces where shared values are celebrated and social identities are reinforced (Anderson, 2021; Ramshaw, 2019; Stronach et al., 2016; Tomić, 2023).

Critical Geography

Critical geography explores the tensions and relations of power operating in geographical formations and inequalities (Koch, 2016). In sport geography, this perspective allows the examination of how accessibility, inclusion and fairness are negotiated in sport and sport spaces and how these will support and contest structures of power and inequality. By looking into issues such as the distribution of sport resources, the design of inclusive or exclusive spaces, and the representation of different groups within sporting cultures, critical geography exposes how sport both reflect and influence broader social inequalities while also highlighting potential avenues for change that promote equity and social justice in sport participation and infrastructure (Darnell & Millington, 2020; Neal et al., 2024; Swope et al., 2022).

These theoretical perspectives guided the review's comprehensive approach to understanding the complex relationship between sport and geography. Spatial theory facilitated the analysis of the physical arrangement of sport venues, while place theory emphasises these spaces' cultural and social significance. Human-environment interaction offered insights into the reciprocal influence between natural landscapes and sport practices, illustrating how geography shapes sport and vice versa. Cultural geography enriched the discussion by exploring how sport reflects cultural values and contributes to identity formation. Finally, critical geography provided a framework for examining issues of power and equity within sport spaces. By integrating these frameworks, the review aimed to develop a multidimensional understanding of how sport and geography intersect, shaping physical, social, and cultural landscapes, with each perspective offering unique contributions without conflicting with one another.

Significance to Knowledge Generation

Exploring the mutual influence of sport and geography through an interdisciplinary lens provides invaluable insights into how these fields interact to shape both physical and cultural landscapes. Each approach offers a unique perspective on how sport impacts urban planning, cultural identity, social dynamics, and environmental sustainability. This section discusses the various interdisciplinary approaches contributing to knowledge generation in sport and geography studies.

Geographic Spatial Analysis

The accomplishment of geographic spatial analysis is cardinal in inspecting the establishment and accessibility of sport facilities since they are involved in community captivation and urban development (Asefi & Nosrati, 2020). It allows us to see a specific relationship between sport venues' spatial patterns and the positioning of local and regional identity, together with resource distribution for social cohesion in the context of urban and rural environments (Bale, 2003). By identifying where sport facilities are located as part of integrated city planning, this approach can identify trends that enable or hinder community engagement in sport, thus guiding policy in achieving egalitarian access to sport resources (Salarvandian et al., 2020; Yang et al., 2023).

Environmental Sustainability Perspective

The environmental sustainability perspective is another vital lens in the management of sport organisations, particularly in addressing the ecological effects of sport events and structures in realising sustainable goals (Collins & Roberts, 2017). Large-scale sport events (LSSEs) and large sport venues (LSVs) create substantial environmental impacts due to the resources they consume, the wastes they generate, and the ecosystem alterations they cause in host locations (Banks-Leite et al., 2012; Cerezo-Esteve et al., 2022; Kellison & Casper, 2017). In response, the United Nations Environment Programme (UNEP, 2018) called for a shift towards sustainability in sport, including waste reduction. This guidance underscores the importance of sustainable sport development in managing and mitigating adverse effects on the local and international environment.

Economic and Tourism Analysis

Sport is usually viewed as an investment with the potential to generate significant returns for local and national revenues through tourism and event sponsorship. To capitalise on this, authorities often propose hosting major international sport events to achieve economic growth and renewal, as such events attract substantial investments (Graham et al., 2021; Shen et al., 2020). Economics plays a crucial role in assessing the value of sport-related activities, including tourism, infrastructural development, and employment opportunities (Getz & Page, 2016; Giampiccoli et al., 2015). This approach also evaluates the broader economic benefits and costs by considering sport's social and environmental impacts (Geeraert, 2016; Chersulich Tomino et al., 2020). By understanding these potential advantages and drawbacks, communities can strategically leverage sport to boost economic development and effectively prioritise using available resources.

Social and Political Context

This view examines the social and political organisation of sport, focusing on issues of accessibility and participation and exploring questions on who has the right to engage in sporting activities and the underlying reasons. It highlights how sport can serve as a platform for addressing social issues, such as allocating resources and opportunities for participation in sport based on geographical and socioeconomic context (Bergsgard, 2018; Spaaij & Jeanes 2013). By recognising how sport spaces mirror or contest existing power relations in society, this approach underscores the need for bias-free policies to support equal rights and opportunities for diverse groups to participate in sport (Silva, 2018).

Historical Context

The historical approach investigates how sport and geography have transformed throughout history, helping experts comprehend how past events, cultural contexts and geographical factors have affected sport practices. It emphasises how historical developments influence present sport trends and predicts future directions

(Koenigstorfer et al., 2019; Moyle et al., 2018). This approach is particularly valuable for scholars as it allows them to locate contemporary sport practices within specific socio-spatial constellations, enabling unique or alternative perspectives on the development of modern sport (Krüger, 2015; Nauright & Zipp, 2018)

Synthesis of Perspectives and Approaches

The integration of these theoretical and analytical frameworks affirms sport as a dynamic force that shapes and is shaped by geography. Sportscapes are simultaneously physical and symbolic, functioning as arenas for human performance, interaction, cultural expression and socioeconomic development. The legitimate intersection of sport and geography lies in its ability to respond to complex inquiries about space, identity, power, and sustainability. By synthesising spatial theory, place theory, human-environment interaction, cultural geography, and critical geography with interdisciplinary analytical approaches of geographic spatial analysis, environmental sustainability perspective, economic and tourism analysis, social and political context, and historical context, the study of sport becomes a holistic inquiry into how societies are organised, how they interact with their environments, and how they envision and shape their futures. This intersection underscores sport's relevance as a transformative and integrative force within the broader human experience.

Influence of Geographical Factors on Sport Events

In this section, the paper explores how specific geographical factors of weather and topography impact sport and their cultural context. Participation in sport requires a suitable setting and adequate space. Athletic performance is affected by both internal factors, such as skill level, and external factors, including the surrounding physical environment. Factors such as temperature, pollution, altitude, and wind can influence athletic performance. Additionally, geographical factors and the geographical environment play a critical role in shaping all aspects of sport participation, whether through physical, cultural, social, or geopolitical factors. These geographical aspects collectively form the context of sport, impacting it positively or negatively.

Weather and Climatic Factors

Weather and climate significantly impact sport performance and the cultural context of sport activities. Keys climatic elements, such as temperature, humidity, air pressure, wind direction and speed, and precipitation, shape the conditions under which sport is practised and competed (Brocherie et al., 2015; Wagner et al., 2019). The performance of both recreational and competitive athletes is closely tied to these environmental conditions (Casa et al., 2015; Gatterer et al., 2021; Segreti et al., 2024). High temperatures can lead to heat-related illnesses such as muscle cramps and heat stroke, while excessively low temperatures may cause hypothermia. Climatic variations also influence the development of distinct sport cultures, such as the prevalence of ice sport in cold climatic areas like the Arctic region.

Sport participants in tropical regions, on the other hand, benefit from the warm weather and extended daylight hours, enabling them to engage in activities like the long jump, surfing, swimming, beach volleyball, and outdoor tennis, which are well-suited to these conditions. However, weather and climate significantly influence athletic performance, as they affect an athlete's neuromuscular strength and aerobic metabolism, both of which vary seasonally. Weather conditions are unpredictable and constantly changing, often creating challenges for sport participation. Abrupt shifts in weather can disrupt human activities, including sport. Excessive heat, extreme cold, or rainy weather can hinder physical exercise,

making outdoor sport difficult or even impossible (Casa et al., 2015). These conditions can also affect indoor sport, underscoring the pervasive impact of weather on sport activities. Moreover, climate variations can affect not only physical capabilities but also athletes' mental and emotional well-being (Mental Health Foundation, 2023). Overall, weather and climate play a pivotal role in shaping the feasibility and effectiveness of sport activities.

Temperature

The importance of eco-climatic and geo-climatic conditions in determining the thermal comfort of athletes cannot be overstated. Athletes must operate within their thermal comfort zone to achieve optimal performance (Fantozzi & Lamberti, 2019; Gibson et al., 2019; Revel & Arnesano, 2014). Temperature significantly influences athletes' physiological responses and performance capabilities, affecting the body's fluid balance and cardiovascular system. Extreme temperatures, whether high or low, pose serious health risks to athletes and can impact their ability to perform effectively (Casa et al., 2015).

Athletes are vulnerable to dehydration and heat-related illnesses like heat cramps and heatstroke in hot weather. Dehydration may cause athletes to have higher heart and breathing rates, affecting their endurance and stamina. On the other hand, in chilly temperatures, muscles might react sluggishly because of vasoconstriction, leading to decreased flexibility and coordination. Taking temperature conditions into account is crucial for athletes and sport organisers in the preparation and execution of sport events. Adequate hydration, getting accustomed to the climate, and dressing in protective clothing are essential ways to minimise the negative impacts of extreme temperatures on athletes' performance and health (Gibson et al., 2020; Périard et al., 2021).

Precipitation

The intensity, duration, and timing of precipitation impact sport and the nature of sporting events. Regarding outdoor sport, precipitation imposes many challenges because they are played on open fields or grounds. Slippery and unpredictable conditions created by rain or snow affect the athletes' ability to maintain traction and proper footing. The risk of slips, falls, and injuries is prominent in soccer, football, or rugby (Day et al., 2021; Della Villa et al., 2020).

Heavy rain or snowfall can impair visibility and hinder athletes from performing at their best. Prolonged exposure to precipitation can also lead to discomfort and reduced concentration, further impacting sport performance (Alhadad et al., 2019; Allen-Collinson & Jennings, 2019). In sport where equipment is used, such as tennis or baseball, precipitation can affect the grip and handling of equipment, resulting in errors and mishaps during play. For instance, wet tennis courts or baseball fields can cause balls to skid or bounce unpredictably, altering the game's outcome.

Wind

While it is often assumed that wind does not significantly affect outcomes because all athletes compete under similar circumstances, this is not entirely true for sports like golf. In golf, strong winds can considerably affect the trajectory and distance of the ball, thus influencing performance and scores. Although all competitors may face the same windy conditions, the variability in gusts and directional shifts can create uneven challenges. These fluctuations can influence shot accuracy, club selection, and course strategy, leading to unpredictable outcomes and potentially impacting players differently throughout the tournament (Jowett & Phillips, 2023; Malik & Saha, 2021).

The wind's force can also affect the durations, lengths, and altitudes of athletic

performances, particularly in track and field events like sprinting, long jump, high jump, and throwing sports such as javelin and discus (Alam et al., 2019; Moinat et al., 2018). For a performance to be eligible for record consideration, the wind speed must not exceed two meters per second, as specified by the International Association of Athletics Federations (IAAF, 2018). Any record will not be officially acknowledged if the wind speed goes above 2m/s, regardless of the distance, time, or height reached. In long-distance races, runners run on a circular track, which helps to neutralise the effects of wind, making it an exception to the usual rules. Wind plays an active role in athletic performances such as sprinting, jumping, and throwing events. As are time, distance, and height-related issues in any sport, wind speed and direction are crucial in athletic performance.

The IAAF (2018) has established regulations concerning wind speeds to promote fairness in competition. To be deemed valid under these rules, sprinting, jumping, and throwing events must have a wind speed of less than two meters per second (2m/s) for record-keeping purposes. If the wind speed surpasses this limit, any record achieved in terms of time, distance, or height will not be recognised. These rules are designed to lessen the impact of different wind conditions on athletes' performance. A powerful tailwind can give athletes a push, leading to quicker times or longer distances, whereas a headwind can impede their advancement. The IAAF aims to uphold fairness and consistency in athletic performances by limiting wind speed.

It should be noted that these regulations do not apply to long-distance running events. This happens because athletes usually race on circular tracks, which help distribute the impact of wind evenly throughout the competition. Nevertheless, the wind can still affect the tactics and strategies of competitors in these events. Overall, wind is a critical factor that athletes and coaches must consider when preparing for competitions. It can significantly impact performance outcomes and the validity of records in certain athletic events, highlighting the importance of understanding and managing its effects.

Topographic Factors

The impact of topography on sport is multifaceted and significant, influencing the types of sport that emerge in specific regions and the skill sets athletes require to excel (Yang & Duan, 2024). The natural landscape of an area often dictates the physical activities that are feasible and practical. For instance, regions with high cliffs and mountains are ideal for rock climbing, mountain climbing, and abseiling. Athletes residing in these regions have convenient access to appropriate training facilities, enabling them to improve their abilities in these sports (Song & Zhang, 2018; Zhang, 2024).

Topography also affects the nature of sport fields and infrastructure. Sport fields are often designed with a slope to facilitate drainage by directing water toward the edges, where it can be gathered and removed through natural or man-made drainage systems. Adequate drainage is essential for maintaining the usability of sport fields. Different sports require distinct slope setups to optimise performance and safety. Additionally, terrain slopes influence athletic performance, with uphill areas demanding more energy from athletes, while downhill slopes reduce the energy required.

The topography of a region can also shape its climate and weather patterns, which, in turn, affect the types of sports that are popular or feasible. Flat terrains and mild climates, for example, are ideal for outdoor activities like running, cycling, and horse riding, offering ample space and favourable weather conditions. Similarly, with their vast stretches of shoreline, coastal areas foster a

culture centred on water-based activities such as swimming, surfing, sailing, and fishing. These geographical conditions drive strong cultural preference for specific sports (Liu et al., 2020; Ounanian et al., 2021; Wang & Chen, 2020).

In mountainous regions, large trail networks or ski resorts attract enthusiasts of hiking, trail running, skiing, and snowboarding. Likewise, areas with established water systems or ocean borders support activities such as rowing, kayaking, and beach volleyball. Varied topography across regions offers unique challenges and experiences for athletes, influencing sport preferences and culture. Rugged terrains and cliffs draw rock climbers and mountaineers, while flat open lands attract runners and cyclists. Ultimately, topography plays a vital role in shaping sport culture by dictating the types of sports practised, the physical and technical demands on athletes, and the cultural traditions surrounding sport in different regions.

Altitude

Altitude is one of the most significant aspects of topography in relation to sport and demands closer attention. It affects the topography of a region, influencing various physical and environmental characteristics, including the shape and height of landforms, climate, vegetation, and human activity. These factors, in turn, affect athletic performance, especially in sports that rely on aerobic energy systems. The availability of oxygen and atmospheric pressure directly impacts athletic performance. At higher altitudes, the partial pressure of oxygen (pO2) decreases, with levels dropping from 159 mm Hg at sea level to 125 mm Hg at 2000 meters above sea level. This creates a low-pressure, low-oxygen environment, reducing oxygen delivery to tissues and limiting the oxygen supply to working muscles (Kenny et al., 2019; Martin et al., 2015; Wilmore et al., 2019). Consequently, athletes may experience decreased exercise capacity, earlier onset of fatigue, and reduced endurance performance (Ramchandani et al., 2024).

Altitude also affects athletes' physiology and ability to execute technical moves (Chapman et al., 2013). For example, the reduced air density at higher elevations results in lower drag and lift forces on a ball, allowing it to travel at longer distances with less curve. These changes can influence an athlete's ability to perform techniques, such as reacting to incoming balls or adjusting to altered trajectories (Dykiert et al., 2010). The impact of altitude varies depending on the type of physical activity. Endurance sports, such as long-distance running, cycling, and cross-country skiing, are significantly affected due to their high reliance on aerobic energy systems.

In contrast, anaerobic sports like sprinting and weightlifting are less impacted because they primarily depend on non-oxygen-dependent energy systems. Altitude poses both challenges and opportunities for athletes. While reduced oxygen availability can hinder performance, it also offers potential advantages for training adaptations. Understanding the physiological effects of altitude and employing appropriate training and acclimatisation strategies are essential for optimising performance at varying elevations.

The Effect of Sport on Geography

The previous section analysed how various geographical factors influence sport. In this section, the paper shifts focus to how sport shapes the spatial and human aspects of geography, providing a thorough discussion of the interactive relationship between the two. In particular, it highlights how sport shapes cultural and social geography, landscapes, urban planning, global and political economy, migration and tourism.

Sport emerged as a significant focal point within geography due to its increasing human, economic, and environmental significance. Once regarded merely as leisure activities, sport now holds considerable importance across economic, commercial, political, and environmental spheres. Although traditionally not linked to geographic studies, sport has gained credibility within the field as a subject of social research. This legitimacy stems from sport's relevance in addressing various societal issues and geography's ability to enhance understanding of sport-related phenomena. The widespread popularity of the sport and its diverse geographical representations reflect vital aspects of social structures and hierarchies, offering valuable potential research areas. Sport is no longer peripheral to society but plays a central role in daily life, often mirroring prevailing social and political issues (Woods & Butler, 2020). Moreover, sport has become a vital institution for transmitting cultural traits, serving as a prominent and widespread social system in modern society.

Sport is closely linked to geography through its environmental impact, including the construction of stadiums, golf courses, and other sport facilities. These activities influence local and global landscapes, showcasing sport's interaction with the physical environment. Additionally, sport is intricately tied to the global political economy and international relations, reflecting broader social and economic dynamics (Al-Dulami et al., 2024; Black & Hibbeln, 2018; Dichter & Johns, 2014).

Effects of Sport on Cultural Geography

In cultural geography, sport is viewed as a source of cultural symbols and expressions of identity. It shapes cultural landscapes and influences the diffusion of values, traditions, and lifestyles across different geographic contexts. The following discussion elaborates on some of these dynamics.

Cultural symbols

Sport serves as a powerful symbol of identity, reflecting and reinforcing regional, national, and local pride. Through shared experiences and collective representation, sport unites individuals and communities, creating a sense of belonging and shared purpose. Sport teams often represent specific communities or regions, with their logos, colours, and mascots becoming iconic symbols of pride and unity. For instance, the Green Bay Packers in the United States are deeply rooted in the identity of Green Bay, Wisconsin, with their community-owned structure and iconic green-and-gold colours symbolising local pride (Richards, 2021). Similarly, football clubs like FC Barcelona represent not just a city but also a broader cultural identity, including Catalan pride and independence (Juventeny Berdún, 2017). These symbols transcend sport, influencing art, music, and even political movements.

On a national scale, sport can act as a unifying force and a source of international recognition. For example, cricket is central to India's national identity, symbolising a shared cultural experience across a vast and diverse population. The Indian Premier League (IPL) has further elevated cricket's role in the country's cultural fabric, bringing together regional loyalties under a national spotlight (Anuranj & Sircar, 2024). Similarly, rugby in New Zealand is more than just a sport; the All Blacks team represents the nation's values, history, and indigenous Maori culture, with the haka (traditional Maori war dance) becoming an iconic pre-game ritual known worldwide (Jackson & Sturm, 2021).

Expressing Identity

Participation in and support for sport is a profound expression of cultural identity, enabling individuals and communities to celebrate, preserve, and share their heritage. Traditional sport and indigenous games, in particular, are deeply rooted in cultural

practices, often passed down through generations as a way to maintain cultural continuity and foster community cohesion (Maguire, 2011). For instance, the Maasai people of East Africa incorporate spear-throwing and high jumping into their cultural events, activities that are not only demonstrations of physical skill but also tied to rites of passage and traditional ceremonies. High jumping, in particular, is showcased during the Adumu dance, which is performed as part of initiation rituals, symbolising strength and readiness for adulthood (Burnett, 2018). The Highland Games of Scotland showcase traditional activities such as caber tossing and hammer throwing. These events celebrate Scottish heritage and draw global attention to the country's history and traditions. The games have become a significant tourist attraction, blending local pride with international participation (Bowness, 2020).

Cultural Landscapes

Sport infrastructure and facilities, such as stadiums, arenas, and sport fields, play a vital role in shaping the cultural landscape of a place. These spaces often serve as hubs for social gatherings, community events, and recreational activities, influencing the visual and experiential character of both urban and rural environments (Kellison & Hong, 2015; Thomson et al., 2018). An excellent example is the Maracanã Stadium, an iconic representation of the cultural landscape of Rio de Janeiro and Brazil as a whole. Constructed in 1950 to host the FIFA World Cup, the Maracanã is commonly recognised as the largest football stadium in South America and a historical landmark. With the largest seating capacities in the world, the stadium has staged some of the biggest soccer matches, concerts, and other public events to become part of Rio's identity and a source of pride for the Brazilian nation. Through its architecture and its role as the focal point for significant events, the Maracanã illustrates how sport infrastructure contributes to the cultural and emotional mapping of Brazilian society. It also embodies Brazilians' deep appreciation for soccer and sport, reflecting broader global practices and values associated with sport infrastructure (Brown & Lanci, 2016).

Diffusion of Values and Traditions

The diffusion of values and traditions through sport is based on the premise that sport serves as a carrier of culture, allowing norms, values, and customs to spread across regions and nations. Sport is not merely a form of physical activity; it also encompasses broader cultural elements, representing any human activity performed on various levels and crossing national borders. Values such as team spirit, sportsmanship, determination, and respect for rivals are transmitted worldwide through international media coverage, popular sport, and the influence of prominent athletes. These elements foster cultural convergence, enabling diverse groups to share common values and feel connected as part of a larger global community (Girardin et al., 2020). A prominent example is the Olympic Games, which embody and promote ideals of good sportsmanship, fair play, and international cooperation. By showcasing these values, the Games influence attitudes and behaviours worldwide, reinforcing the role of sport as a unifying cultural force (Gary & Rubin, 2016).

Lifestyle and Leisure Practices

Whether experienced as an athlete or spectator, sport significantly influence people's choices in life and leisure. It shapes daily organisational patterns, peer associations, and activities, embedding itself in the temporal structure of people's lives, relationships, and even their self- and collective identities. The formal, controlled, and institutionalised nature of competitive sport contrasts with the informal and free-flowing approach to recreational activities. Both, however, align closely with the broader

lifestyle-related practices and social dynamics that have become increasingly important in the sociology and psychology of sport (Coakley, 2015).

As a cultural institution, sport is one of society's most important creations, bringing together participants and spectators from diverse regions of the world. This interaction fosters cultural assimilation and diffusion, strengthening connections across different groups (Ciomag & Pop, 2024). Sport tourism, in particular, can enhance a country's heritage, identity, and sense of community (Ramshaw, 2014). It allows residents to showcase their culture while allowing visitors to engage with local traditions and customs. Moreover, sport tourism often drives the development of new sport-related infrastructure, enhancing both local and international engagement (Pioletti, 2017).

Sport is deeply intertwined with cultural geography, serving as a dynamic expression of identity, values, and traditions. By examining its cultural dimensions, geographers gain valuable insights into how sport shapes culture and how cultural landscapes and societal identities influence sport. This mutual interaction highlights sport's pivotal role in reflecting and shaping the cultural fabric of societies worldwide.

Effects of Sport on Social Geography

Sport serves as a mirror, reflecting the broader dynamics of society. It is often seen as a one-way relationship, where sport primarily mirrors societal changes in technology, social dynamics, ideas, and trends rather than actively shaping or interacting with society in significant ways. Sport, however, also plays a socially cohesive role by bringing people together from diverse backgrounds, including different regions, social classes, ethnic groups, and religions (Mier & Fletcher, 2019). Additionally, sport facilitates universal social mobility, exemplified through the achievements of transnational athletes or teams who transcend barriers and inspire broader societal change (Taylor, 2024).

Social Cohesion

Sport is a powerful force for social cohesion, bringing together individuals from diverse social, economic, and cultural backgrounds. This unifying effect is one of sport's most profound societal contributions, fostering a shared sense of identity, belonging, and community. By creating environments where differences are set aside in favour of common goals or passions, sport helps forge connections that transcend individual backgrounds, promoting inclusivity and collective identity (Anderson-Butcher, 2019).

Local sports leagues often bring communities together at an amateur or grassroots level. For instance, community soccer leagues in diverse urban neighbourhoods can foster relationships among families who might not otherwise interact (Kim et al., 2020). These shared experiences promote understanding, break down stereotypes, and strengthen the fabric of the community. Beyond participation, the communal experience of supporting teams, attending events, and celebrating achievements also strengthens social bonds. For example, during global events like the FIFA World Cup or the Olympic Games, millions of people unite behind their national teams, setting aside regional, ethnic, or class differences to rally around a shared identity. Fans gathering in public places to watch matches, wearing team colours, and celebrating victories together exemplify how sport can create a sense of solidarity and pride.

Sport has also proven to be an effective tool for integrating marginalised groups into society. For instance, programmes for refugees and immigrants often use sport as a means of social integration, helping newcomers connect with their host communities (Ponciano Núñez & Portela-Pino, 2024). Organisations like *Fútbol Más* use soccer to promote

resilience and inclusion in vulnerable populations, encouraging social interaction and community-building.

Spatial Organisation

The spatial organisation of sport facilities, including stadiums, arenas, and fields, profoundly influences neighbourhood development by serving as central hubs for social gatherings and recreational activities. These venues attract people for sport events, concerts, and other community gatherings, fostering social cohesion and creating shared experiences among residents. Such sport places often stimulate economic growth, with nearby businesses like restaurants, retail stores, and hotels benefiting from increased foot traffic during events (Abbiasov & Sedov, 2022). Facilities like Baltimore's Camden Yards have revitalised surrounding areas, attracting investment and reshaping the urban landscape by drawing both local visitors and tourists. Additionally, sport facilities influence urban planning decisions, such as transit access and pedestrian zones, to manage the influx of people on event days, thereby integrating these spaces into the broader city infrastructure. This integration not only enhances accessibility but also contributes to neighbourhood identity, as iconic sport venues become symbols of local pride and heritage, solidifying their role as landmarks within the community (Graham et al., 2021; Shen et al., 2020).

Identity and Pride

Individuals show great passion towards sport because they constitute an integral part of a cultural identity and a source of regional or national pride. Every time athletes or teams achieve victories at a national or international level, the morale of the whole region is boosted, as these successes are considered a testament to the community's collective strength and capability. Sport achievements extend beyond mere regional identification; they can reinvigorate cultural unity and promote the region to its residents and the broader world. Celebrations, such as public gatherings, parades, and media coverage, often feature these victories, fostering social cohesion and a sense of togetherness (Andersen, 2021). In this way, sport triumphs become symbolic, not merely showcasing athletic superiority but allowing the sport to function as a cultural artefact that sustains a shared memory. This memory supports and reinforces social bonds by connecting participants to a perceived collective identity - the self-constructed regional identity of the people.

Social Capital

A critical function of sport is to create cooperation and trust networks across communities and other related groups (Skinner et al., 2018). Participating in sport can teach people how to relate with others, collaborate, and show mutual respect—skills that are fundamental not only in social relationships but also in professional and business contexts. In team sport, players rely on one another to achieve shared objectives. This reliance requires a willingness to follow instructions, share responsibilities, and work collectively toward success. Such dynamics promote interpersonal relationships centred on collective goals, helping individual players navigate both success and failure as a unified team. For instance, soccer fosters confidence and mutual support among teammates, creating a sense of trust that can extend beyond the sport into broader social and occupational realities (Kellison & Hong, 2015). In other words, sport provides a framework for building appropriate social relationships and interdependence. Individuals contribute to a sense of community through cooperation and trust, facilitating social integration and collective confidence. This process underscores sport's broader impact as a tool for uniting individuals and strengthening societal bonds.

Gender Dynamics

Sport can also foster gender equity by promoting female involvement in athletic disciplines and advancing the principle of gender mainstreaming (Newland et al., 2020). When women and girls are encouraged to participate in sporting activities, societal gaps between genders are reduced, and the efforts and achievements are appreciated. This leads to physical and mental health benefits and empowers women, providing them with opportunities to showcase their talents and strengths. Moreover, participation in sport can challenge traditional views of women's roles and abilities, opening new perspectives and influencing societal attitudes toward gender equality. Female athletes who excel in their disciplines serve as role models for younger generations, inspiring broader acceptance of equal opportunities. The representation of women in professional sport and mass media provides visibility in male-dominated areas, promoting inclusivity and normalising female participation at all levels. Although the dismantling of cultural prejudices against women's participation and leadership in sport is challenged by the persistent male-dominant sport culture, programmes and policies continue to promote sport participation of girls and women in sport (Hayhurst et al., 2021; Sotiriadou & de Haan, 2019).

Addressing Social Issues

Sporting projects are increasingly recognised for their positive influence on addressing various societal problems, including youth development and discrimination. These programmes unite individuals from diverse backgrounds, fostering skills and values that enhance socialisation and resilience. Sport-based youth development initiatives, for example, provide young people with mentorship, life skills, and constructive activities, steering them away from negative influences and promoting positive engagement (Malete et al., 2022).

Efforts to combat prejudice, racism, and bullying within and beyond sport advance social justice by encouraging participants to respect and value one another. Such initiatives not only transform individuals but also influence spectators and broader communities. Sport thus becomes more than a leisure activity —it serves as a platform for equity, social justice, and amplifying the often-overlooked voices of minorities (Spaaij & Jeanes, 2013). By breaking down social and economic barriers, sport provides a universal platform that fosters community pride and personal identity, often through support for local teams and events. This highlights the importance of integrating sport into urban planning and policy design. Policymakers and leaders who recognise sport's potential can leverage it to promote sustainable social development, improve social networks, and enhance the quality of life in communities (Malchrowicz-Mośko, et al., 2021; Middle et al., 2017).

Landscapes Produced or Altered by Sport

The transformation of natural landscapes for sporting purposes dates back to the ancient Olympic Games in Olympia. Since then, sport has continued to shape physical environments, evolving into a global industry capable of dramatically transforming landscapes. John Bale (2003) coined the term *sportscapes* to describe these areas, which geographers analyse to understand the intersection of sport and the built environment. Sportscapes are integral to urban settings and can be found in diverse forms, from school playgrounds to large stadiums. These spaces are essential features of city landscapes, reflecting how sport influences the social, cultural, and economic fabric of communities.

Stadiums and Arenas

Large-scale sport facilities, such as stadiums and arenas, are not only integral to the practice and enjoyment of sport but also serve as key elements of Sportscapes, shaping both

the physical and cultural landscapes of cities (Kellison & Hong, 2015; Thomson et al., 2018). These structures are designed to accommodate a wide range of events, from local matches to international competitions, concerts, and cultural performances, making them versatile hubs of activity. For example, the iconic Wembley Stadium in London, which hosts major football matches, concerts, and other events, is a globally recognised landmark that significantly affects the city's identity. Beyond their functional role, large-scale facilities often become cultural landmarks that influence the urban landscape, reshaping skylines and contributing to the character of their surroundings.

Recreational Spaces

These leisure facilities provide communal health-promoting interaction, social activities, and programme spaces. These convenient areas are natural or planned environments where people of all ages can exercise — individually or in groups—for an active and healthy mind and body, reducing stress and ill health (van den Bosch & Ode Sang, 2017). Such recreational spaces can help improve social cohesion since they are designed for convergence zones, promoting socialisation, creating friendships, and instilling a sense of community belongingness. Urban planners and community developers are encouraged to integrate sportscapes in neighbourhoods as they are vital to the well-being and quality of urban life, given that such spaces meet recreational needs and foster positive socio-spatial dynamics (Loder, 2020).

Event Venues

Mega sporting events such as the Olympics, Football World Cup, and Cricket World Cup transform the social landscape, both qualitatively and quantitatively. These events drive the development of sport facilities, transportation and accommodation, improving the city's long-term functionality (Kellison & Hong, 2015; Thomson et al., 2018). Beyond physical infrastructure upgrades, these events generate global awareness, facilitate cultural interflow, instil pride and sustain enthusiasm for the sport. They often have lasting effects, including the ability to attract post-event tourism and increase overall sport participation (Grix & Houlihan, 2014).

Training Facilities

Sportscapes play a critical role in developing athletic talent by providing dedicated spaces for training facilities and establishing sport academies that support talent identification and development from the grassroots level. These facilities create structured environments where young athletes can receive professional coaching, access resources, and cultivate skills early on. By focusing on grassroots development, sportscapes help discover and nurture promising talents who may otherwise lack adequate training. Establishing sport academies within these spaces fosters skill development. It promotes discipline, teamwork, and a strong sport culture among youth, creating a pipeline of talent that can progress to higher levels of competition (Hylton, 2013). The presence of well-equipped sportscapes in communities supports local sport programmes. It offers pathways for youth to excel in sport, ultimately contributing to national sport development and the broader cultural and economic benefits of a vibrant sport sector (Siedentop et al., 2020).

Natural Landscapes

Infrastructure development for purposes such as skiing, golfing, and trekking may also have physical consequences on a given area's physical environment by changing that area's physical features and species (Kellison, 2015; Kellison & Hong, 2015). Development usually includes activities like vegetation removal, landscape changes, and building road lodges, which harm plant and animal species in their natural habitat. While outdoor recreational sport and ecotourism foster

economic returns and consciousness of environmental conservation, they must be controlled to minimise adverse impacts on ecology. While planning for these sportscapes, protective strategies must include area containment, using environmentally friendly construction materials, and preventing disruption of animal activities (Banks-Leite et al., 2012). Biodiversity conservation for recreation facilitates' sustainable development means that recreational landscapes in the given regions can support people's leisure and preserve the ecological communities, ensuring both human and environmental health benefits.

Technological Innovations

The technological systems have a notable influence on the generation of sport settings that relate to the manner and class of infrastructural development of advanced sport structures and the enhancement of materials and software for practice, evaluation and communication technology for consumers. Smart technologies have been incorporated into smart stadiums to integrate sustainable energy, efficient waste management and crowd management practices, thus making events safer and more environmentally friendly (Lusweti & Odawa, 2023). Significant advancements in wearables allow athletes to see their physiological information in real time, hence improving training and recovery regimes (Kovoor et al., 2024). Finally, virtual and augmented reality elements provide engaging and appealing solutions for fans since such events can be watched remotely as if the fans were at the venue. In total, the era of technology is positively changing the future of the sport industry by making it more effective, entertaining and environmentally friendly for athletes and the audience.

Sportscapes are dynamic and multifaceted environments that reflect the intricate relationship between sport, society, and the built environment (Hallmann & Zhener, 2023). By studying and understanding sportscapes, geographers can contribute important insights into how sport influences and reshape environments and how these transformations impact individuals, communities, and the broader urban and natural landscapes. Sportscapes encompass not only the physical infrastructure, such as stadiums and parks, but also the socio-cultural dynamics that emerge around these spaces, including local identities and community cohesion (Bale, 2003). These environments often drive economic growth by attracting tourism, enhancing property values, and encouraging healthier lifestyles through accessible recreational spaces. Moreover, sportscapes contribute to environmental awareness as many facilities adopt sustainable practices, promoting a balance between development and ecological preservation (Gaffney, 2013b). Understanding sportscapes allows geographers and urban planners to create more inclusive and sustainable spaces catering to athletic and community needs (O'Reilly, 2015).

Urban Planning and Sport

Sport arenas are a crucial element of city scenery and traditions. As grand architectural structures, stadiums symbolize both location and feelings of personal and communal belonging (Guschwan, 2017). They offer a platform for sporting events and ceremonial battles among subcultural factions. Stadiums significantly impact urban political economy, media production, identity performance, socialisation processes, and the spread of political ideologies as they are designed to accommodate large crowds (Gaffney, 2006). The spatial transformation of a city is happening due to the buildup of transportation networks to connect people from different places and reshape the city's environment. Sporting architecture is one of the cityscape's priciest and most distinctive

features (Graham et al., 2021; Shen et al., 2020). Investments in sport infrastructure, such as constructing stadiums or hosting major sporting events, can stimulate urban revitalisation efforts. This can lead to the redevelopment of neglected areas, improvements in infrastructure, and economic growth (Kellison, 2024).

Global Political Economy

The global spread of sport impacts the international political economy in multiple ways, such as equipment production, athletic talent migration, and organising global mega-events. Companies like Nike, Adidas, and Reebok have established factories in different regions, influencing the production market and regional market balance (Di Maria, 2019). International mega-events such as the FIFA World Cup and the Olympic Games have hastened the process of globalisation, leading to the expansion of the global political economy by generating fresh opportunities and accessing new markets (Wolfe et al., 2021). Sport sectors attract international investment in different segments of the sport economy and create job opportunities.

Effects on Migration

Sport migration is a significant global social phenomenon involving the movement of athletes, coaches, managers, administrators, spectators, and other professionals due to sport-related activities. This migration occurs when individuals temporarily or permanently relocate across regions or countries in pursuit of opportunities in sport, competition, or employment within the sport industry (Rojo et al., 2022). Driven by economic, social, cultural, and professional motivations, sport migration is a complex aspect of globalisation that influences both local and international sport landscapes. Over the past three decades, there has been a marked shift from local to global movement within sport, with an increasing number of individuals migrating each year, affecting all continents. Similar to the concept of "brain drain," sport migration has been referred to as "foot drain" or "muscle drain" (Bale & Dejonghe, 2008), which describes the movement of talented athletes from poorer sporting events to wealthier competitions (Schieder, 2024; Stewart-Withers et al., 2017).

Sport and Tourism

Sport tourism encompasses visiting athletic competitions in various nations and locales (Getz & Page, 2016). It can be further categorised as professional and amateur tourism. Sport tourism is travelling from one's primary home to participate in a sport activity for fun or competition, watching sport at different levels, and visiting sport attractions like a Hall of Fame or water park. Sport is defined in multiple ways and from diverse viewpoints. Sport and active recreation have grown to be highly lucrative industries on a global scale. Sport tourism can be seen as a distinct combination of activity, individuals, and location. Sport tourism is a phenomenon that involves a unique combination of activity, people, and location, impacting social, economic, and cultural aspects (Higham & Hinch, 2018).

Impact of Sport on the Environment

In the previous section, the effect of sport on geography focused on the *spatial and societal transformation* caused by sport—its influence on human systems, urban planning, and cultural landscapes was discussed. This section features the impact of sport on the environment, underscoring the *ecological consequences* of sport, including resource use, pollution, and sustainability challenges. Both are interconnected, as geographical transformations (e.g., building a stadium) often have environmental implications, but they focus on distinct dimensions of sport's influence.

Land Use and Infrastructure Development

The construction of sport facilities often requires significant land use, leading to habitat destruction and ecosystem disruption.

Expanding sports infrastructure, such as stadiums and golf courses, may also lead to ecosystem destruction and landscape fragmentation. The construction of infrastructure like ski slopes and golf courses increases deforestation and alters natural landscapes. It also disturbed the soil and water systems, leading to further human encroachment and potential ecological imbalance (Kellison, 2015; Kellison & Hong, 2015).

Resource Consumption and Pollution

Sport events and activities lead to resource depletion and environmental contamination via energy consumption, transportation, and waste production (Holmes & Mair, 2020). The high energy usage from operating sport facilities and transporting athletes and fans releases greenhouse gases and air pollution. Operating and maintaining sport venues necessitate resources like water, energy, and materials, which lead to resource depletion and pollution. Activities that require a lot of energy, such as artificial snow production at ski resorts or nighttime lighting for games, may significantly increase energy consumption and carbon dioxide emissions (Sobajo, 2024). The transportation of athletes, spectators, and gear to and from sport venues can result in air and noise pollution, especially when many individuals travel far distances (Koivisto, 2021).

Waste Generation

Sporting events often generate substantial waste, including plastic bottles, food packaging, single-use items, and discarded equipment, which can overwhelm local waste management systems (Bianchini & Rossi, 2021). For instance, mega events like the FIFA World Cup or the Olympics produce tons of waste daily, underscoring the urgent need for effective waste reduction strategies. A UNEP report (2018) entitled "*Playing for the Planet: How Sport Can Drive Climate Action*" highlights integrating recycling programmes and sustainable practices into sport venues to minimise the environmental footprint. Improper waste disposal can lead to soil and water contamination, affecting ecosystems and posing threats to wildlife, such as the ingestion of plastics or entanglement in waste materials. To address this, many organisations are adopting zero-waste initiatives, such as composting food waste, using biodegradable materials, and implementing waste segregation systems at events to reduce their ecological impact (Costello et al., 2017; Nwabuwe & Odirin, 2024).

Water Usage and Pollution

Golf courses are often criticised for their high water consumption, as maintaining the lush, green turf typical of these facilities requires significant irrigation. This demand can pressure local water supplies, particularly in areas with scarce water resources (Peña, 2014; Serba et al., 2022). In drought-prone areas, this heavy water consumption can result in aquifers' depletion, reduced water availability for local communities, and stress ecosystems that rely on natural water sources. Runoff from sport facilities often contains pollutants, including fertilisers, pesticides, and herbicides, which can pollute bodies of water, impacting the quality of water and its marine inhabitants (Gosh et al., 2022; Singh et al., 2020)

Biodiversity Loss and Habitat Degradation

Converting natural environments like forests, wetlands, and grasslands into sport facilities results in a significant decline in biodiversity, as these areas often serve as critical habitats for native species (Brownlie, 2019). Indigenous plants and animals that depend on these ecosystems for nourishment, shelter, and breeding grounds are displaced or unable to survive in altered surroundings. The construction of supporting infrastructure, including roads, parking lots, and buildings, further exacerbates the problem by fragmenting natural habitats into smaller, disconnected patches. This fragmentation

disrupts wildlife and migration patterns, limits access to resources, and isolates populations, reducing genetic diversity and ecological health, making the affected environments less capable of recovering from environmental stressors like climate change or invasive species (Banks-Leite et al., 2012; International Union for Conservation of Nature, 2018).

Recommendations for Mitigating the Environmental Impacts of Sport

As the global sport industry continues to grow, so does its environmental footprint, encompassing issues such as waste generation, resource consumption, habitat disruption, and greenhouse gas emissions. Addressing these challenges requires a collaborative effort among sport organisers, athletes, fans, policymakers, and communities to adopt sustainable practices and policies. This section provides actionable recommendations to minimise the ecological impacts of sporting activities and facilities, drawing on innovative strategies and interdisciplinary approaches. The sports sector can play a pivotal role in promoting environmental stewardship by implementing measures such as sustainable infrastructure development, energy-efficient technologies, transportation innovations, water conservation, waste reduction, biodiversity protection, and awareness campaigns. These efforts not only safeguard natural resources but also inspire broader societal change toward sustainability, ensuring the longevity and resilience of both the environment and the sports industry.

Sustainable Infrastructure Development

Sport facilities must be designed using environmentally friendly materials and sustainable processes. For example, venues hosting multiple events and activities should optimise space usage to minimise land consumption while maximising sport participation. Surrounding green spaces should be carefully planned to preserve the local biome and avoid habitat destruction (Graham et al., 2021; Shen et al., 2020). Incorporating permeable surfaces into facility designs can reduce surface runoff, enhance groundwater recharge, and help restore environmental equilibrium in urban areas (Santhanam & Majumdar, 2020). Further, achieving green certifications, such as Leadership in Energy and Environmental Design (LEED), must be prioritised to align with sustainability principles and reduce the ecological footprint of sport infrastructure (Dendura, 2020).

Energy Efficiency Measures

Encourage the development of sport venues powered by renewable energy sources such as solar and wind energy systems. Upgrading existing facilities with energy-efficient technologies, including LED lighting and advanced heating, ventilation, and air conditioning systems, can lead to substantial reduction in energy consumption and greenhouse gas emissions. Additionally, the environmental impact of specific practices, such as snow production for ski resorts, should be minimised by adopting environmentally sustainable methods (Alhadad et al., 2019). Conducting regular energy audits can help identify areas and times where energy-saving measures, such as optimising lighting and heating schedules, are needed (Caffrey, 2021). Partnering with renewable energy providers to supply sustainable energy for sporting events is another practical approach to lowering the environmental footprint of sports (Bernard et al., 2021).

Transportation Innovations

To reduce greenhouse gas emissions associated with sport event transportation, encourage public transport and car-sharing among participants. Cities hosting sport events should implement transport management policies that prioritise electric buses and shuttles to minimise pollution

(Chirieleison & Scrucca, 2017). Promoting cycling and walking to sport facilities further supports environmentally friendly transport systems (Banks-Leite et al., 2012). Hosting online celebrations or providing live streams for the fans can also help reduce the need for extensive travel, hence lessening environmental impacts. Additional measures, such as installing bike-sharing stations and electric car charging points around sporting venues, can further promote sustainable travel solutions.

Water Conservation Strategies

Promote the use of efficient water technologies in sport facilities, such as drip irrigation systems and wastewater treatment, for maintaining fields and golf courses (Ortuño, 2015). In drought-prone areas, replacing high-maintenance turf with water-efficient plants can further reduce water consumption (Matlock et al., 2019; Serba et al., 2022). Incorporating water recycling systems within facilities can minimise the reliance on fresh water by reusing treated water for irrigation and cleaning. Rainwater harvesting systems can also be implemented to collect and store water for similar purposes, reducing the demand for municipal water supplies (Takeuchi & Tanaka, 2020). . Establishing clear water management policies for high-demand sport facilities is vital to ensure sustainable and water use.

Waste Reduction and Recycling Programmes

Sport organisers must ensure the availability of adequate waste disposal services, proper designated recycling stations, and widespread composting systems (Lanzendorf et al., 2023). Collaborating with organisations that provide environmentally friendly packaging for events can help reduce the environmental footprint. Educating fans to bring reusable items and encouraging proper waste disposal can further minimise landfill contributions (UNEP, 2018). Training volunteers and staff on waste segregation techniques is essential to enhance recycling efficiency and reduce overall environmental impact. Additionally, conducting comprehensive waste audits post-event enables organisers to assess the waste generated, measure its environmental impact, and refine waste management strategies for future events (Nwabuwe & Odirin, 2024).

Biodiversity Protection Plans

Before undertaking new projects involving sport facilities that could impact the environment, particularly biodiversity, thorough environmental assessments should be conducted to ensure adequate protective measures are in place (Kolawole & Iyiola, 2023). Developers should prioritise constructing facilities within already populated or distributed areas to reduce habitat fragmentation and allow the safe movement of wildlife (Kellison, 2015; Kellison & Hong, 2015). Post-construction, ecosystem damages can be mitigated and offset through habitat restoration efforts, such as rebuilding ecosystems to improve their ecological viability (Banks-Leite et al., 2012). Additional measures include growing plants indigenous to the region around sport facilities and constructing artificial meadows to promote biodiversity recovery. Involving local communities and stakeholders in conservation initiatives during the planning and construction phases can further support biodiversity protection and foster a sense of collective ownership and responsibility (International Union for Conservation of Nature, 2018).

Education and Awareness Campaigns

Sport organisers, athletes, fans, and other stakeholders must be educated about the environmental impacts of sporting activities and the steps needed to mitigate them (Greenwell, 2024). Public awareness campaigns can encourage responsible consumption, recycling habits, and eco-friendly transportation within event areas. Leveraging social media platforms and involving athletes as ambassadors for

sustainability can effectively broaden participation in environmental activities. Additionally, integrating environmental conservation principles into youth community sport programmes can foster ecological consciousness and sustainable practice from an early age (Cayola et al., 2024).

Conclusion

The intricate connection between sport and geography uncovers a dynamic interplay that shapes both physical landscapes and human interactions. Exploring this connection reveals how geography determines the accessibility, diversity, and cultural significance of sport in different regions, while sport, in turn, influences land use patterns, promotes community development, and influences perceptions of place identity. This mutual impact highlights the urgency of incorporating geographical factors into sport planning, management, and research. By acknowledging and harnessing the synergies between sport and geography, we can drive sustainable growth, strengthen social cohesion, and advocate for global access to sport. Strengthening cross-disciplinary collaboration among geographers, sport scholars, policymakers, and practitioners is vital for unlocking the full potential of this complex relationship, paving the way for innovative solutions that benefit both society and the environment.

While this narrative review offers valuable insights into the intricate relationship between sport and geography, it is essential to acknowledge its limitations. The review primarily draws on existing literature, which may not encompass all recent studies or emerging perspectives. Additionally, due to the broad scope of the topic, certain specific aspects, such as the detailed environmental impacts of sport in different cultural contexts, may not have been fully explored. The complex and multifaceted nature of the intersection between sport and geography also means that certain regional variations or nuanced case studies may have been underrepresented. Moreover, this review does not offer primary data or empirical analysis, limiting the provision of firsthand evidence or original insights that could strengthen the validity and applicability of its conclusions.

Despite these limitations, the review contributes to the literature by synthesising interdisciplinary perspectives on how geography influences sport and how sport shapes geographical spaces. It highlights the critical role of geographical factors in shaping sports participation, infrastructure, and community dynamics. Furthermore, it provides a foundation for future research by suggesting key areas where the interplay between sport and geography warrants further investigation. Through this comprehensive overview, the review adds depth to our understanding of this complex relationship, promoting the integration of geographical considerations into sport policy, planning, and practice.

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I am an independent researcher specialising in the interdisciplinary study of sport and geography. My research interests explore the mutual influences between sport environments and geographical dynamics, particularly how sport spaces impact community development, cultural identity, and urban planning. With a Geography background, my work explores the socio-economic and environmental impacts of sport on communities and landscapes.

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ORIGINAL RESEARCH

Navigating Gender Dynamics in Sport and Physical Activity Employment

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Abstract

Gender disparity in employment remains a pervasive global issue, and the sport and physical activity (SPA) sector is no exception. Despite a notable increase in women's sport participation in recent years, this growth has not yet fully translated into significant strides toward gender parity in employment, as men continue to hold most SPA-related occupations. This study investigated the persistent gender inequalities in the SPA industry, focusing on the Madrid region in Spain. A survey was conducted with 400 SPA professionals—102 women and 298 men—to examine occupational representation, employment pathways, employment determinants, contractual arrangements, salary differentials, and organisational affiliations. The findings confirm the underrepresentation of women across all domains of SPA employment, especially in sport coaching for competition. The results showed that recruitment and hiring of women rely primarily on curriculum vitae reviews or public examinations, unlike their male counterparts who lean on their social networks or personal referrals to secure employment in the SPA sector. Findings also revealed that men hold a substantial proportion of formal and informal contracts, including non-contracted jobs, affirming their dominance in both ends of the SPA contractual employment spectrum. Moreover, the study indicated that women often face unfavourable work conditions, including extended working hours and salary differentials. Informed by institutional theory and intersectionality, the discussion highlights the entrenched structures, norms, and practices that reinforce the marginalisation of women based on overlapping identities, sustaining employment practices and outcomes over time. Initiatives are proposed to strengthen equitability and transparency in hiring practices, increase job security, and improve work conditions, enabling organisations and institutions in Madrid to mobilise resources and programmes that foster gender parity in the SPA sector. By advocating gender-informed initiatives that challenge embedded norms and biases, recommendations may be adapted to diverse contexts and cultures where similar gender disparities exist in SPA industries worldwide.

Keywords:
Decent work and economic growth, Gender Equity, Job Security, Quality Education, Recruitment Transparency, Reduced Inequalities

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Introduction

The urgency of achieving gender parity in sport and physical activity (SPA) is reinforced by its widespread impact on society, particularly on providing services that depend on the effective engagement of SPA professionals (Campos-Izquierdo, 2019). Achieving gender equality in SPA is not just a matter of fairness but a crucial step toward creating a more inclusive and empowering environment for women employees. It ensures that their knowledge, skills, perspectives, approaches and contributions are fully recognised and valued in enhancing the quality of services offered while fostering a collaborative effort to promote community health. A diverse SPA workforce can address various needs and preferences, improving accessibility and engagement for all societal groups. However, despite laudable advances in promoting gender equality in sport and physical activity, empirical evidence suggests a persistent gender disparity that demands urgent attention and concerted efforts (Guinto et al., 2021; López de D'Amico & González-Rivera, 2021). Literature underscores a prevailing trend wherein men continue to outnumber women in the SPA labour market, a pattern resistant to change despite the growth of the SPA industry and its associated employment opportunities (López de D'Amico & González-Rivera, 2021).

The pursuit of gender parity in sport has gained a solid foothold on the European and global political agendas, particularly with gender equality as one of the priorities of the 2030 Sustainable Development Goals (SDGs) (López de D'Amico & González-Rivera, 2021). The Brighton Plus Helsinki 2014 Declaration on Women and Sport augments this commitment, targeting organisations involved in the various facets of sport and physical activity (International Working Group, 2014). Legislative initiatives further assert the importance of gender equality in sport. The White Paper on Sport (Commission of the European Communities, 2007), as one of the European Commission's main contributions to the theme of sport and its role in the daily lives of the European Union (EU) citizens, called on member states to promote media coverage of women's sporting activities, encouraging the emergence of women role models, career opportunities of women in sport-related areas, and appointment in decision-making positions. It also opened future perspectives for sport at the EU level (European Union, 2017). In the Madrid region of Spain, the Law 6/2016 of 24 November was instituted to govern the exercise of sports professions, obligating professionals to champion effective equality for women in sport and prevent discrimination at all levels.

Despite global campaigns, legislative developments, and international conferences advocating for gender equality in physical education (PE) and sport, a glaring underrepresentation of women appears at all levels, from participation to employment (Benn et al., 2016; López de D'Amico et al., 2021; López de D'Amico & González-Rivera, 2021). The Council of the European Union (2014), in its conclusion on 'Gender equality in sport,' encouraged sport organisations to address gender imbalances in executive boards, committees, management, and coaching roles. However, gender inequalities remain, transcending mere representation to encompass broader issues, particularly within the SPA sector. Women continue to face challenges ranging from lower wages and job insecurity to limited opportunities for promotion and fewer women mentors (Kubayi et al., 2017; Alfaro et al., 2013; Viñas & Vilanova, 2014). While the SPA labour market is expanding and diversifying, researchers reveal a constant underrepresentation of women, not only in Spain but also across Europe and globally (Acosta & Carpenter, 2014; Campos-

Izquierdo et al., 2016; Joseph & Anderson, 2016; Pippos, 2017; Kane & LaVoi, 2018; European Observatoire of Sport and Employment, 2022). Data extracted by Eurostat (2024) confirms that men outnumber women in sport employment and that this gender gap has increased since 2011.

Studies on the working conditions of women SPA professionals are scarce, limiting data-informed policies and programmes to enhance participation, employment and leadership opportunities for women. Researchers have identified challenges such as the gender wage gap, job insecurity, salaries, working hours, and contract types, particularly in roles such as sports trainer and sports director (Alfaro et al., 2013; Viñas & Vilanova, 2014; Kubayi et al., 2017). An examination of men's recruitment and selection processes in the SPA industry affirmed their reliance on acquaintances and impressions in addition to qualifications, potentially marginalising women in organisations predominantly led by men (Campos-Izquierdo & González-Rivera, 2010). Similarly, an analysis of 12 SPA occupations in Spain found that occupations such as sport coach, SPA manager, personal trainer, and extra-curricular PE teacher exhibited higher percentages of men than women (Campos-Izquierdo et al., 2016). The study noted that the role of sport animator was the sole occupation in which women outnumbered men, accounting for 52% of the workforce.

Micro and Macro Views of Gender Disparity in SPA

In examining gender disparities in SPA, the macro-level analysis of institutional theory and the micro-level analysis of intersectionality theory can be integrated to explore how formal and informal structures, policies, and norms intertwine with overlapping social identities—such as gender, race, class, status and age—to shape systemic inequalities. This combined approach allows the research to address complex phenomena for a broader understanding of how sociocultural mechanisms disadvantage and privilege people according to their intersecting identities.

From the lens of institutional theory, persistent gender disparity in SPA may be understood by investigating the foundational role of institutional factors in shaping opportunities, policies, and norms. It defines institutions as composed of "more-or-less taken-for-granted repetitive social behaviour that is underpinned by normative systems and cognitive understandings that give meaning to social exchange, thus self-reproducing social order" (Greenwood et al., 2008, pp. 4-5). Recognised for its versatility and applicability in the context of sport (Robertson et al., 2022), the theory addresses individual, organisational, and systemic dynamics in disparity. Scott (2014) emphasised the enduring aspects of institutions' structures—rules, routines, and norms—becoming standard practices that are not only expected but also considered normal or unavoidable. However, he stressed the importance of shifting the focus of analysis from institutional structures to processes to explore how institutions enable and constrain human agency, emphasising their dynamic and reciprocal relationship (Jakobsen, 2014).

In particular, the theory elucidates how formal and informal structures—such as regulations, norms, practices and routines—evolve into authoritative frameworks that shape and regulate social behaviour. Walker and colleagues (2017) assert that examining institutionalised sport practices offers insight into the enduring overrepresentation of male leadership within sport organisations. In the context of SPA employment, institutional theory provides a suitable lens to investigate how prevalent organisational norms, professional standards, hiring practices, and

cultural expectations contribute to the underrepresentation of women. These formal and informal structures often benefit conventional networks and career pathways for men, fortifying gender disparities despite explicit societal and policy-level allegiance to equality.

From the perspective of intersectionality theory, systemic inequalities within SPA may be analysed by examining how individuals' multiple identities intersect to create simultaneous discrimination and privilege related to gender, race, class and other categories of identity as social processes (Kelly et al., 2021). For example, a married woman with children may face compounded biases related to her gender and marital and parental status, particularly in hiring or promotion processes within SPA organisations. Conversely, a white, non-disabled, heterosexual man in a leadership position may afford him greater access to resources, opportunities, and decision-making power, often without the need to overcome the same barriers faced by those with marginalised intersecting identities (e.g., black person with a disability, homosexual, rank-and-file). Intersectionality has long been utilised as a framework to analyse the complex interconnection of social categories in investigating marginalisation; however, Kimberlé Crenshaw is acknowledged for articulating the term to position the Black feminist critique of experiences in the interconnection of gender and race (Crenshaw, 1989,1991). Since then, intersectionality has been applied in SPA research to consider how multiple social categories intersect and influence each other in creating disparities among individuals and communities (Lee et al., 2023; Lim et al., 2021; Sone et al., 2024; Young et al., 2024).

Specifically, intersectionality considers how institutional policies, presumably designed to be neutral, disproportionately disadvantage individuals with intersecting marginalised identities, such as single mothers or older women in SPA roles. It also examines how socioeconomic class, marital and parental status interlink with gender, creating barriers to educational qualifications or professional networks that are prerequisites to SPA employment. Moreover, it investigates how perceptions and stereotypes tied to overlapping identities reinforce disparity, as in the case of LGBTQ+ women in leadership positions due to heteronormative and patriarchal prejudices (Best, 2019; Shamloo et al., 2022; Stephenson, 2020).

This study investigated the trends in recruitment, employment pathways, salary differentials, working conditions, and organisational affiliations between genders in the Madrid region of Spain. Using institutional theory, it explored how formal and informal organisational structures, policies, and norms may explain persistent gender disparities in SPA employment. By incorporating intersectionality, the study also examined how simultaneous social identities, such as gender, class, status, education or age, may intertwine in shaping SPA employment experiences and outcomes. This integrated approach informed key areas for reform to advance employment equity in the SPA sector.

Methodology

Location of the Study

Madrid, the central capital of Spain, is an autonomous community occupying 8,028 km^2 and housing 6,750,336 residents, making it one of the most densely populated regions in the country. According to the latest figures published by the National Statistics Institute

(2023), the gender distribution comprises 3,520,182 (52.14%) women and 3,230,154 (47.86%) men. The sport system in the Community of Madrid is a product of the collaboration between the public and private sectors to promote and develop physical and sporting activities among its residents. In the public sector, various regional and local entities are involved in the organisation and development of sport in the region (National Council of Spain, 2005).

The sport industry in Spain is a major driver of employment at the national level. For every million euros generated, the industry creates 12.4 jobs, 30% higher than the national average. Gyms and sport facilities are particularly impactful, generating 42 and 23 jobs per million euros in revenue, respectively. These figures are drawn from the 2020 Thermometer of the Sports Ecosystem in Spain report (Manca et al., 2020), based on data from the National Statistics Institute (INE, 2023). Although these numbers appear impressive on the national scale, an investigation of sport and SDGs in Spain reveals that the achievement of SDG 5 (Gender Equality) in sport remains stalled with the persistence of male dominance in the field (Campillo-Sánchez et al., 2021).

Spain ranks fourth in the EU on the 2023 Gender Equality Index with a score of 76.4 out of 100, exceeding the EU average by 6.2 points (European Institute for Gender Equity, 2023). Spain's score has risen by 10 points since 2010, driven primarily by significant progress in the domains of power (+28.5 points) and time (+9.6 points). Its score improved by 1.8 points between 2020 and 2023, pushing its rank by two places to fourth. Despite these advancements, inequalities remain most pronounced in the work domain, where the country scores 75.4 points and ranks 17th in the EU, dropping five places since 2020. The sub-domain of participation, with a score of 82.3, presents the greatest area for improvement, placing Spain 22nd in the EU. In contrast, the sub-domain of segregation and quality of work shows stronger performance, with a score of 69.0 points and a ninth rank. Although analysts suggest that the narrowing of the gap across the EU could reflect progress in countries previously lagging, Spain's need to address the gender disparity in the domain of work demands attention.

Sample

This study investigated the SPA occupations of 400 participants residing in Madrid by employing a survey methodology. The occupational categories utilised in the survey were drawn from those identified in the research of Campos Izquierdo et al. (2016). A multi-stage probabilistic sampling approach was implemented to recruit participants. Stratification was performed across several layers, covering the geographical areas within the Community of Madrid, municipalities, sports facilities, and participant demographics. Within each layer, random sampling was conducted, with proportional allocation based on the size of the geographic area represented by each municipality.

The absence of a comprehensive census of SPA professionals in Madrid made it challenging to estimate the representative sample size accurately. To compute the adequate sample size of the SPA workforce, we presupposed the target population to be infinite or very large (Rodríguez-Osuna, 2002). Assuming a population variance of p and q = 50, the margin of error for this study was set at 5%, with a confidence level of 95.5% and a probability interval of 2%. This sampling approach was adopted to ensure robust and statistically reliable findings concerning SPA occupations in the Madrid region.

Participants were selected using multi-stage probability sampling with stratification

applied at sequential levels: from the Community of Madrid area to municipalities, sports facilities, and individual participants. Random sampling at each stage ensured proportional representation based on the geographical size of municipalities, with all municipalities included within each stratum defined by territory size and habitat. This approach ensured comprehensive geographical coverage, enhancing sample representativeness. Inclusion criteria required participants to be professionals in SPA roles within Madrid's sport facilities. Exclusion criteria omitted individuals without formal SPA responsibilities or those outside selected facilities. A listing of Madrid's SPA professionals was generated through sport facility visits. Once the sports facilities in the municipalities were randomly selected from the pool, the person providing SPA services was invited for the interview. Participation in the study was purely voluntary; thus, additional participants from the listing were recruited following the initial refusals.

Data Collection

Data were collected over a year by a research assistant (RA) with a degree in Physical Activity and Sport Sciences. Before the data collection stage, the RA underwent extensive training in conducting structured interviews using the survey questionnaire. The Committee on the Ethics of Experimentation Research and Animal Experimentation at an accredited university granted ethical approval for this research.

Instrument

The original PROAFIDE questionnaire (Campos-Izquierdo, 2011) comprised 57 items, categorised into five sections: (1) Socio-demographic characteristics, (2) PAS functions, (3) Professional performance within specific occupations, (4) Work characteristics, and (5) Training characteristics of these professionals. Some questions permitted single answers, but several questions allowed multiple responses. Its validation procedure involved a three-phase approach. Sixteen independent experts initially evaluated the questionnaire. Afterwards, a group of national and international experts discussed its content in detail. Pilot testing was finally conducted with 250 individuals actively involved in Physical Activity and Sport (PAS) functions across diverse regions of the Spanish peninsula.

The second section, which covered the classification of sport and activity functions from the PROAFIDE (Campos-Izquierdo, 2011), was utilised to gather data for the current study. Three items within the PAS functions were modified to align with the professions specific to the Community of Madrid, following the Autonomous Community's professional regulations. Five experts with doctorates in Physical Activity and Sport Sciences thoroughly reviewed these modifications. After careful evaluation, the experts approved the final version of the study questionnaire. This process ensured the questionnaire's relevance and applicability to the current research, allowing the systematic examination of gender disparities across various variables, including current SPA employment, methods of job acquisition, perceived importance of employment elements, working conditions, and types of organisations employing participants.

To clarify, institutional theory and intersectionality were not used in PROAFIDE's questionnaire design (Campos-Izquierdo, 2011). Instead, this study used the theories to help interpret the data collected rather than retroactively rationalise the study design, the contents of the questionnaires, or the constructs under investigation. Using theoretical frameworks in discussing results, even when not employed during survey design, can enhance the depth and context of research findings (Godfrey et al., 2010).

Data Analysis

The information was organised and processed using IBM SPSS Statistics for Windows, version 19 (IBM Corp, Armonk, NY, USA). Univariate and bivariate descriptive analyses were conducted alongside an inferential analysis of contingency tables. The data analysis involved calculating measures like the Phi correlation coefficient and Pearson's Chi-square value and then determining their significance.

Results

Occupational Representation

The distribution of SPA occupations between genders is presented in Figure 1. The data reveals a clear pattern of women's underrepresentation across all roles, with marked disparities in several professions. Certain occupations within the SPA sector were notably skewed toward male representation. For instance, the positions of SPA advisor, researcher, and consultant were held exclusively by men. Similarly, over 80% of roles, such as SPA theory instructor, fitness instructor, and sport coach, were occupied by men. In most SPA professions, the proportion of women remained below 30%, except for PE teachers and physical sport readaptators, where women constitute 42.6% and 31.3%, respectively, of the workforce. In particular, the job of a physical sport readaptator consists of readapting, reconditioning, and re-education through tailored sport, physical activity, or exercise to restore physical function and movement for those recovering from injury or illness, including athletes of individual and team sports at different levels of competition (Campos-Izquierdo et al., 2016).

The chi-square (X^2) test and Phi coefficient (ϕ) were utilised to analyse the relationship between the categorical variables of gender and SPA occupation. By calculating the chi-square statistic and comparing it to critical values or obtaining *p*-values, the test helps determine if the observed gender distribution across occupations deviates significantly from what would be expected if there were no gender disparities. On the other hand, the Phi coefficient provided insight into the magnitude and direction of association between gender and occupation. A larger absolute value of the Phi coefficient indicates a stronger association between gender and occupation, suggesting a greater degree of gender disparity in job distribution. Moreover, a positive Phi value indicates that one gender is more likely to be employed in certain occupations compared to the other gender, while a negative value indicates the opposite.

Data analysis from Table 1 reveals significant gender disparities in several SPA occupations, with the most remarkable contrast observed among the position of sport coaches. In this role, only 16% of the professionals were women, compared to 83.9% of men, a highly significant gap ($p < 0.001$). Similar gender imbalances were observed in the personal trainer and PE teacher roles, yielding a significance level of $p = .004$, indicating substantial under-representation of women. The fitness instructor role also displayed a significant difference, with women making up just 16% of the workforce compared to 83% of men ($p = .034$). Even in the role of PE Teacher, where women have relatively higher representation at 42.6% women compared to 57.4% men, the disparity is still statistically significant, underscoring the prevailing trend of male dominance across all SPA occupations.

Table 1. SPA occupations across genders

Occupations	Women		Men		X^2	ϕ	P p <0.05
	n	%	n	%			
Sport instructor	42	29.4	101	70.6	1.755	-.066	.185
Personal trainer/physical trainer/fitness trainer	52	26.8	142	73.2	8.383	-.145	**.004**
Sport animator	2	28.6	5	71.4	.035	-.009	.851
Extra-curricular PE teacher	21	26.6	50	70.4	.755	-.043	.385
Sport coach	30	16.1	156	83.9	16.071	.200	**.000**
Fitness instructor/Aerobics instructor	15	16.9	74	83.1	4.504	.106	**.034**
Physical-Sport Readaptator	31	31.3	68	68.7	2.340	-.076	.126
SPA manager	14	26.4	39	73.6	.366	.030	.833
PE teacher	20	42.6	27	57.4	8.153	-.143	**.004**
SPA theory instructor	2	15.3	11	84.7	.724	.043	.395
SPA advisor/Researcher/ Consultant	0	0	5	100	1.733	.066	.188

*Multiple responses to this item were allowed, with some respondents holding more than one SPA job. Percentages were computed on the total number of men and women in each occupation.

Employment Pathways

Table 2 features the various methods men and women use to secure employment in the SPA sector. The most notable observation is the reliance on personal networks for both men and women, although the extent differs. Among men, 48% secured employment through acquaintances, making it their most common strategy to secure employment. Typically, such acquaintances were met in sport events and competitions. In comparison, only 39.5 % of women reported securing a job through personal contacts within the industry. These findings highlight gendered differences in employment strategies within the SPA sector, with men demonstrating a stronger reliance on personal networks than women. This disparity may reflect broader gender dynamics, where men have predictably more extensive networking opportunities than women in the male-dominated environment of SPA, strengthening their employment prospects. Nonetheless, the findings affirm the value of networking within the SPA sector, regardless of gender, suggesting that such connections play a crucial role in securing employment opportunities.

Among women, the second most prevalent route to SPA employment was through public entrance examinations (20.2%), asserting the importance of formal recruitment processes and merit-based selection. On the other hand, the prevalence of internal promotions (23.9%) as the second most prevalent avenue for men underlines the importance of career progression within organisations for male SPA employees. This suggests that men often advance through established progression within their organisations, pointing to internal talent development structures that may favour men.

Table 2. Means of securing SPA employment across genders

Ways of securing employment	Women (n= 102)		Men (n=298)	
	n	%	n	%
Internal promotion	20	18.3	78	23.9
Internet	3	2.8	15	4.6
Job bank	13	12	14	4.3
Acquaintances	43	39.5	157	48.2
Advertisements	4	3.6	16	4.9
Practicum	4	3.6	21	6.4
Public entrance examinations	22	20.2	25	7.7
Total responses*	109	100	326	100

*Multiple responses to this item were allowed; thus, the total number of responses exceeded the total number of respondents

Factors Influencing Employment

The prioritisation of employment factors by women and men reveals interesting gender dynamics in how each group navigates job opportunities and perceives valuable qualities in applicants. Table 3 shows that interpersonal skills stand out as the foremost factor for securing an SPA position, as identified by both cohorts, with 15.6% of women and 18.2% of men acknowledging its paramount importance. This finding makes sense in connection with the previous finding that both women and men can benefit from their network of acquaintances to secure employment, suggesting the value of interpersonal skills in securing a job in SPA. This shared emphasis underscores the value of relationship-building skills in the SPA environment, where peer and client interactions are key to job success.

There are notable differences, however, in how men and women prioritise other factors. For women, "having been an athlete" is second, followed by "lifelong learning" as third. Women seem to value soft skills that contribute to effective client interactions and workplace harmony. "Having been an athlete" may be considered a competitive edge as it showcases their physical fitness and conditioning background, enhancing their credibility in promoting health and well-being. Moreover, upholding "lifelong learning" reflects a commitment to continuing professional development. In a competitive industry that thrives on new trends, techniques, and advancements in health and wellness, women appear to recognise the need to stay updated with the latest industry practices, enhancing their expertise and credibility.

On the other hand, men consider "references or contacts" as the second most influential component in securing SPA employment, with 16.5% choosing them as a key factor. This second priority among men aligns with data on the premium they put on acquaintances to secure employment in the SPA industry. The potential advantages men perceive in leveraging social capital to navigate the job market include enhancing their job prospects and potential for internal promotion. "Having been an athlete" ranks third for men, indicating that they, like women, value athletic experiences in boosting credibility in the SPA industry. The fact that it ranks lower than networking, however, indicates that men might view their athletic experience as a complement to, rather than a replacement for, a well-established professional network. This difference underscores how men might prioritise a more strategic use of relationships and connections over individual qualities when advancing their careers in the SPA industry.

Among the key elements of employment for women and men, only two yielded significant gender differences: academic record and professional experience. Women placed higher importance on academic achievements, with 7% identifying them as crucial compared to only 3.8% of men. This difference is statistically significant at $p = .028$, indicating that women are more likely than men to view a solid academic background as a vital component of SPA employment. This focus on formal education may reflect women's perception that professional qualifications serve as an objective and recognised validation of their skills and knowledge. Women can enhance their competence and credibility by emphasising academic achievements and overcoming potential gender biases in a competitive job market. Moreover, academic records may be seen as a means to establish their expertise and legitimacy, especially in fields where credentials can directly impact hiring decisions.

While both genders affirm the value of professional experience, women place significantly more emphasis on it (14.3% for women versus 11% for men, with a *p*-value of .005), indicating that women view a proven track record and relevant work history as essential to securing SPA employment opportunities. In contrast, men tend to consider networking and references crucial to gaining entry into the SPA industry. These differences highlight broader gendered strategies in professional advancement, where women prioritise clear-cut credentials to validate their expertise while men utilise social capital and networks as pathways to employment opportunities.

Table 3. Level of importance ascribed to employment elements across genders

Elements	Sex	Very important/ Important		Moderately important		Slightly Important/ Not important				
		n	%	n	%	n	%	Chi-Square	Phi	P (p<0,05)
Higher level qualification	F	48	12.3	6	5.7	23	5.2	7.625	.157	.106
	M	126	11.7	16	4.8	91	6.6			
Lifelong learning	F	50	12.8	9	8.6	37	8.3	6.147	.127	.188
	M	112	10.4	32	9.5	139	10.2			
Academic record	F	27	7.0	7	6.6	62	13.9	10.848	.169	**.028**
	M	41	3.8	34	10.1	208	15.2			
Professional experience	F	47	12	14	13.3	35	7.9	14.706	.197	**.005**
	M	119	11	38	11.3	126	9.2			
Knowledge of languages	F	12	3.0	9	8.6	75	16.9	6.448	.168	.130
	M	19	1.8	22	6.6	242	17.7			
Knowledge of new technologies	F	9	2.3	15	14.3	71	15.9	2.475	.081	.649
	M	31	2.9	35	10.4	217	15.8			
Have been an athlete	F	56	14.3	8	7.6	32	7.2	2.208	.076	.698
	M	165	15.3	35	10.4	86	6.3			
Appearance	F	33	8.4	13	12.4	50	11.3	7.969	.145	.093
	M	91	8.4	64	19.0	128	9.3			
References or contacts	F	48	12.3	13	12.4	35	79	5.611	.122	.230
	M	178	16.5	23	6.9	82	6			
Interpersonal skills	F	61	15.6	11	10.5	24	5.4	6.844	.134	.144
	M	197	18.2	37	11	49	3.6			

*Multiple responses to this item were allowed; thus, the total number of responses per category exceeded the number of respondents.
**Percentages were computed against the total responses of women and men for each element. For example, the total responses for "higher level qualification," comprising the responses of women and men across the three response options, is 310; this number represented 100%.

Contractual Arrangements

Table 4 shows that 71% of individuals with formal contracts are men, while only 29% are women. Combined with the observation that 83% of those without formal contracts are men compared to just 16% of women, results reflect a complex gender disparity in employment conditions. This discrepancy suggests that men dominate both ends of the employment spectrum within the surveyed

population—holding a considerable percentage of formal contracts and a substantial proportion of informal, non-contracted roles.

Table 4. SPA working contracts across genders

	Contract		No contract	
	n	%	n	%
Women	90	29	20	16.3
Men	221	71	103	83.7
Total	311	100	123	100

*The total number of responses is more than the total number of respondents because some held more than one SPA job.

Table 5 adds further nuance to the previous finding by demonstrating that among those with contracts, men are more likely to hold temporary positions (27.4%), while women are more likely to be in stable, permanent positions (72.6%). The combined data suggest that while men dominate the total number of contracts (71%), women with contracts (29%) are more likely to have secure, permanent employment. The prominence of men in temporary roles may reflect either a preference for or necessity to take on short-term positions, often characterised by flexibility and job instability. This pattern could imply that although men might be vulnerable to limited job security, benefits, and legal protection, they also have potentially greater mobility or career flexibility due to the nature of the positions they opt to take. Conversely, the prevalence of women in permanent positions could indicate a higher priority on securing financial stability through long-term employment. This finding may also align with societal expectations, where women are more likely to bear the responsibilities for family welfare, such as caregiving for children and elders. Consequently, women may prioritise jobs that offer stability, predictable schedules, and comprehensive benefits. Meanwhile, the higher proportion of men in temporary jobs might indicate a greater willingness or necessity to change jobs to pursue professional goals, reflecting divergent career strategies and social expectations between genders in the Madrid region

Table 5. SPA type of contracts by gender

	Type of contract			
	Permanent		Temporary	
	n	%	n	%
Women	33	32.3	59	27.4
Men	69	67.7	156	72.6
Total	102	100	215	100

*Total responses are less than the total number of respondents because only those with contracts responded

Work Hours and Conditions

Table 6 reveals that men dominate the "less than 21 hours" category, accounting for 79.3% of the total, compared to women, who represent only 20.7%. In the "21–40 hours" range, women make up a slightly larger proportion (33%) but remain underrepresented compared to men, who constitute 67% of this group. Notably, in the "more than 40 hours" category, women's representation increases to 37%, reflecting a larger proportion of women in this high-commitment range relative to their presence in the lower-hour categories. Findings affirm that men consistently outnumber women across all employment categories. The data revealed, however, that a higher proportion of men work less than 21 hours per week, which aligns with their predominance in temporary jobs. Conversely, more women work more than 40 hours per week, reflecting their greater representation in permanent positions.

Table 6. SPA weekly work hours across genders

Sex	less than 21 hrs		21 to 40 hrs		more than 40 hrs	
	n	%	n	%	n	%
Women	52	20.7	43	33	7	37
Men	199	79.3	87	67	12	63
Total	251	100	130	100	19	100

*The total number of responses is more than the total number of respondents because some held more than one SPA job.

Salary Differentials

Table 7 reveals intriguing insights into gender disparities in income distribution within the studied population. Men dominate the lowest salary bracket, earning less than 1000 euros per month, with 76.9% of respondents in this category being men compared to only 23.1% of women. Conversely, women are notably overrepresented in the 1000–1500-euro range, making up 65.1% of this group, while men account for only 34.9%. The trend reverses in the higher salary brackets: men represent 65.7% of those earning 1500–2000 euros, compared to 34.3% of women, and among those earning over 2,000 euros, 57.1% are men, while only 42.9% are women. Overall, the data show that women are clustered in the mid-level salary range, while men are more prevalent at both the lowest and higher salary levels.

Table 7. SPA monthly salaries across genders

Sex	< 1000 €		1000-1500 €		1500-2000 €		> 2000 €	
	n	%	n	%	n	%	n	%
Women	57	23.1	28	65.1	12	34.3	3	42.9
Men	189	76.9	15	34.9	23	65.7	4	57.1
Total	246	100	43	100	35	100	7	100%

* The total number of responses is less than the total number of respondents because some were unsure and did not answer this question.

Organisational Affiliation

Table 8 presents the representation of women and men across different types of SPA organisations. Women comprise 42.5% of employment, while men comprise 57.5% of employment in public entities. Although men outnumber women, the distribution here is relatively more balanced than other organisation types. This suggests that public entities offer a more equitable environment for both genders, likely because of formalised government policies or mandates that promote diversity and inclusion.

Gender disparity is more noticeable in private companies, with men representing 72.1% of employees compared to only 27.9% of women. This pronounced imbalance implies that SPA private companies might exhibit gender bias in hiring or providing limited opportunities for women. The most considerable disparity is found in non-profit organisations (NGOs), where men comprise a sizeable 85.4% of participants, leaving women with only 14.6%. Even though NGOs are usually linked to community-oriented and volunteer-driven work, these numbers show that men are still the majority in non-profit SPA organisations. This observation might indicate that certain institutional or sociocultural factors provide men an advantage in leadership roles or involvement in non-profit sport sectors.

Table 8. Type of SPA organisations across genders

Sex	Public Entities		Private Companies		Non-Profit Organisations	
	n	%	n	%	n	%
Women	37	42.5	50	27.9	28	14.6
Men	50	57.5	129	72.1	164	85.4
Total	87	100	179	100	192	100

*Multiple responses to this item were allowed; thus, the total number of responses exceeded the total number of respondents

Discussion

The results of this investigation into the SPA labour market in Madrid confirm the persistent gender disparity in all SPA occupations in the Madrid region, confirming the broader imbalance in the work domain of Spain as reflected in the 2023 Gender Equity Index (European Institute for Gender Equity, 2023). These results resonate with previous research showing a marked under-representation of women within the Spanish SPA workforce (Alfaro et al., 2013; Burton, 2015; Viñas y Vilanova, 2014). Consistently, the outcomes align with the study by Campos-Izquierdo et al. (2016), which examined the distribution and classification of SPA professionals nationwide. Contrary to previous findings showing marginal numbers of women in the role of sport animator, this study confirmed the continued male dominance across all SPA vocations, underscoring the incessant gender status quo over the years.

Walker et al. (2017) noted that men are overrepresented in leadership and coaching roles in SPA organisations, showing how certain practices have become the standard for career trajectories. These positions often match traditional conceptions about authority, decision-making, and physical skills, which have long been associated with men. Because men mainly occupied these

roles over time, the culture and structure of sport organisations reinforced this trend, making it harder for women to position themselves in these roles (Kavoura & Kokkonen, 2021; Solanas et al., 2022; Wasend & LaVoi, 2019). For instance, hiring and promotion processes could implicitly favour men because of gendered expectations about leadership or the belief that sport coaching for competition is more of a "man's job." While these practices are rarely deliberate, they are fueled by the cultural inertia of these institutional norms.

These disparities can be further examined by considering how the intersection of gender and socioeconomic class in a highly masculine leadership sport environment compound challenges for women in the SPA sector. For example, apart from the dominant masculine cultural norms that may discourage women from pursuing leadership positions (Pape, 2020; Ryan & Dickson, 2018; Sotiradou & Haan, 2019), class-based access to resources and education can limit opportunities for women for upward mobility (Evans & Pfister, 2021; Melton & Bryant, 2017; Piggott, 2021). The findings reinforce how institutional policies intersect with social identities, exacerbating systemic barriers for women aspiring for higher status or more lucrative SPA roles.

Among the SPA jobs examined, PE teaching emerged with the highest number of women employed. Even though women do not outnumber men in this job, this finding matches those from the INCUAL-CSD study (Arbizu, 2008), which found that PE teaching and sport instruction are jobs predominantly held by women, particularly in the earlier years of schooling. Teaching is typically considered an ideal job for women due to its compatibility with family responsibilities (Kelleher et al., 2011; Moreau, 2018; Simmie, 2023). Moreover, it is considered a relatively well-paid, stable profession for women (Nyamubi, 2017; Sahito & Vaisanen, 2020). Despite the high proportion of women in teaching, especially at the primary and secondary levels, more men hold top leadership positions such as superintendents and principals (Hamzeh, 2023; Holmqvist & Lantz Ekström, 2024; Maranto et al., 2018; Tarbutton, 2019), reinforcing traditional conceptions about authority and decision-making, which have long been associated with masculinity.

The findings also accentuate gender differences in networking opportunities within the SPA industry. As a form of social capital, networking offers substantial benefits, including access to job prospects, internal promotions, and salary advantages (Ansmann et al., 2014; Bjärsholm, 2018; Davern & Hachen, 2006; Hasan, 2018; van Emmerik, 2006). While the study affirms that both genders value social connections, research shows they perceive networking differently to secure jobs (Forret, 2006; Forret & Dougherty, 2004; Zdroik & Babiak, 2017; Woehler et al., 2021). Men tend to focus on creating positive first impressions and maintaining homophilous and multi-purpose networks that provide access to influential peers and mentors.

In contrast, women prioritise building substantive relationships and forming networks centred on social support and friendships, which often provide fewer direct career benefits and reinforce gender disparities in access to resources and advancement opportunities (Ibarra, 1999; Ibarra & Petriglieri, 2007; Mengel, 2020; Weis & Lay, 2019). Women may also view networking as "inauthentic" or akin to politicking, find it immodest, and face challenges participating in after-work socialising due to work-life commitments (Ely et al., 2011; Greguletz et al., 2019; Socratous, 2018; Wanigasekara, 2016). For Muslim women, after-office networking in the form of "happy hours" automatically excludes them due to religious and moral

beliefs against alcohol consumption (Arifeen, 2020). Such scenarios demonstrate the intersection of gender, marital status, parental role, and religion in preventing women from engaging in networking practices acceptable to men. Consequently, they depend on merit-based processes, such as curriculum vitae submissions and public exams, emphasising academic achievements and professional experience as objective markers of their qualifications.

Differences in working conditions, such as the higher number of men working without contracts and as self-employed, further reveal underlying inequities that mirror long-held gender expectations about work and economic roles. Men are often seen as more likely to engage in entrepreneurial or risky jobs, as these roles are associated with notions of independence, boldness, and toughness—traditionally considered masculine (Gupta et al., 2008; Gupta et al., 2009; Hamilton, 2013; Raile et al., 2022; Thébaud, 2010). These ideas become part of how the SPA job market works, making it seem normal that men are better at flexible or informal jobs, even if they do not offer much stability or security. As such, more men tend to gravitate toward these jobs, while women seem to be pushed into more stable, contract-based positions like teaching or office work. This scenario reflects the broader societal beliefs about what men and women should do and how secure their jobs should be.

Institutional theory posits that structural disparities are self-reinforcing (Farrell, 2018). The acceptance of men holding high-risk jobs discourages women from seeking these positions, as they often feel such roles are harder to reach or less appealing due to additional challenges, like unequal access to professional connections or higher expectations to fulfil caregiving responsibilities. Over time, these patterns have become a standard part of how organisations, like those in the SPA industry, hire and keep employees, thereby fortifying inequality. The theory also emphasises the role of legitimacy in keeping these inequalities in place (Robertson et al., 2022). The high number of men in non-contract or self-employed jobs might seem like a normal response to market needs or personal choices, concealing the deeper structural biases that push men and women into different kinds of work. Consequently, initiatives to confront the imbalance may be dismissed as unwarranted, given the "natural" distribution of roles.

The intersection of gender and marital status thus reinforces a gendered division of labour, where women—especially those who are married or have caregiving duties—are often expected to prioritise job stability and security, which are typically found in contract-based positions like teaching (Carter; 2016; Ivancheva et al., 2019; Van Damme, 2017). Marital status plays a significant role here, as women are frequently assumed to have domestic and caregiving responsibilities that make them less likely to take on high-risk, entrepreneurial roles (Khasanah & Firmansyah, 2024; SyedSalleh & Mansor, 2022). This societal expectation can limit women's access to more flexible or informal employment opportunities, as they may be pushed into more stable roles that align with the perception of women as primary caregivers and nurturers whose work should be secure and predictable. This dynamic contributes to the gender disparities observed in SPA employment, as these intertwined societal norms shape the job market.

Salary differentials in the study show men clustering at both the lowest and highest salary brackets, suggesting a dual impact of institutional norms. At the low end, temporary and part-time roles—prevalent among men—offer limited income potential. At the high end, male-dominated networks and systemic biases may facilitate access to senior, high-paying positions (Bjärsholm,

2018; Lalanne & Seabright, 2016) Women's concentration on mid-level salaries reflects institutional pressures prioritising stable employment but limiting upward mobility (Anthony & Soontiens, 2022; Sharafizad et al., 2024; Weinkopf, 2014). Men's dominance at salary extremes could also reflect overlapping privileges, including greater flexibility to navigate informal jobs or leverage male-dominated professional networks for lucrative roles. For women, overrepresentation in mid-range salaries suggests a tension between seeking financial security and overcoming barriers to high-earning roles, compounded by societal expectations and gendered labour norms (Bertrand, 2018; Bonikowska et al., 2019; Gartzia, 2016).

The gender disparities in organisational affiliations further affirm structural dynamics within different SPA organisations. Public entities with more balanced gender representation may be influenced by formalised policies and practices promoting equality, such as government mandates for diversity and inclusion (OECD, 2019; Profeta, 2020). Private companies and NGOs, on the other hand, exhibit pronounced gender imbalances (Fatima, 2024; Njoki, 2021; Steinfield & Scott, 2018), possibly due to ingrained cultural norms and institutional biases that favour male representation in leadership or decision-making roles. Despite their focus on community and social good, NGOs are not shielded from broader societal patterns of gender inequality. Women in these sectors often face compounded marginalisation, stemming from both the gender dynamics within the sector and the wider institutional environment that restricts their access to power and decision-making roles.

Conclusion and Recommendations

The findings of this study have underscored the persistent underrepresentation of women across all SPA occupations in the Madrid region, reflecting similar trends observed in other regions of Spain and various international contexts (Acosta & Carpenter, 2014; Campos-Izquierdo et al., 2016; European Observatoire of Sport and Employment, 2022; Joseph & Anderson, 2016; Kane & LaVoi, 2018; Pippos, 2017). A key strength of this investigation lies in its comprehensive examination of the full spectrum of SPA occupations in the Madrid region of Spain. It offers vital baseline data and a broad view of the labour market dynamics in this sector that can inform succeeding initiatives to encourage greater representation of women in the SPA industry.

The small sample size and limited demographic information in the study, however, prevented a more comprehensive and multidimensional analysis of intersecting social categories across specific occupations, recruitment practices, and work conditions. While quantitative data provides valuable insights into broad patterns and trends, it does not capture the nuanced, context-specific factors contributing to gender disparities and working conditions in SPA employment in Madrid. Qualitative data—such as those generated from interviews, focus group discussions, or case studies—is essential in exploring individual experiences, perceptions, and the sociocultural factors shaping workplace dynamics. Additionally, future research should integrate institutional theory and intersectionality from the outset, ensuring consistency across all stages of the research and enabling an examination of institutional constructs (e.g., hiring policies, referral systems, promotions, or salary differentials for similar jobs) and intersecting social identities (e.g., gender, race, socioeconomic status, marital status, or parenting roles). Future initiatives should delve into the employment dynamics of women in specific SPA occupations, particularly those that have been

underexplored in existing literature, such as those involving personal trainers or sport coaches in male-dominated sports and athletic directors or leadership positions within sport organisations. Additionally, studies could focus on niche vocations like sport officials, event coordinators, or roles within emerging fields such as e-sport and adaptive sport programming.

To address gender disparities in the SPA labour market in the Autonomous Region of Madrid and other regions with similar contexts, we draw from institutional theory and intersectionality to propose meaningful changes that challenge entrenched norms, practices, and policies perpetuating these inequities. We present the following actionable recommendations to disrupt these deeply-rooted norms and practices to foster gender equity in SPA employment.

Restructure recruitment practices

The reliance on acquaintance-based recruitment methods typical in other industries reinforces exclusionary networks that primarily benefit men, reinforcing institutional norms that marginalise women (Allemand et al., 2021; Beaman et al., 2018; Fernandez & Rubineau, 2019). Recruitment practices must uphold merit-based and transparent processes. This requires standardising clear criteria for hiring and promotions and removing biases often embedded in informal hiring systems. SPA organisations can adopt digital application platforms and structured interview processes that allow for objective and transparent evaluation of qualifications and competencies (Boned et al., 2015; Alfaro et al., 2018). Institutional theory asserts that informal network norms become self-reinforcing (Farrell, 2018). Challenging these requires intentionally designing formal mechanisms that replace subjective processes with objective and equitable ones (Boned et al., 2015; Alfaro et al., 2018). It would be interesting, for example, to use selection procedures that evaluate qualifications without necessarily putting the name or gender on the CV.

Promote public entrance examinations and competitive selection procedures

Public examinations play a pivotal role in institutionalising meritocratic norms in employment. Women prefer public entrance examinations to secure SPA jobs, trusting in their fairness and transparency. Such systems, however, are not universally implemented. Mandating standardised public entrance examinations across SPA organisations can create equitable access to employment opportunities based on knowledge and skills. Government and regulatory bodies should authorise fair examination systems and provide resources to support consistent implementation. Public examinations can institutionalise merit-based norms, shifting organisational cultures away from the reliance on patronage or favouritism that has historically marginalised underrepresented groups such as women (Campos-Izquierdo & González-Rivera, 2010).

Implement gender-equity hiring policies

Current gender-blind hiring policies often fail to address structural barriers that disadvantage women in the workplace. These barriers include implicit biases, unequal access to professional networks, and stereotypes that lead to higher performance standards for women (Greguletz et al., 2018; Wynn & Correll, 2018). Researchers have suggested that gender quotas can effectively challenge organisational norms and promote gender equality in organisations; however, their implementation and impact are shaped by existing institutional environments and norms (Adriaanse, 2017; Terjesen & Sealy, 2016; Valiente, 2020). As such, the implementation of gender quotas must be

supported by the professional development of women in SPA so that they can occupy positions with competence and confidence. Moreover, analysing how intersectional identities influence job allocation and career progression can uncover hidden biases and lead to more equitable outcomes.

Promote professional development and support systems

Women often lack access to professional development opportunities, such as advanced training or leadership programmes, which are crucial for career advancement. Organisations should establish inclusive professional development initiatives tailored to women across different and simultaneous social categories, including leadership training, workshops, and certification programmes (Alfaro et al., 2018; Foppiano-Vilo et al., 2022). Subsidising costs for these programmes or offering flexible schedules can make them accessible to women with caregiving responsibilities. By creating alternative leadership and skill development pathways, organisations challenge the established norms that typically prioritise men for professional growth opportunities (Luthi, 2023; Moodly & Toni, 2017). It is also recommended to incorporate gender equality training modules into sport management and technical training programmes for both women and men to encourage ally behaviour among men (Madsen et al., 2020). To encourage participation, these programmes could be supported by scholarships (Alfaro et al., 2018).

Create supportive workplace cultures

Gender stereotypes are deeply embedded in SPA workplace cultures, making it challenging for women to succeed, particularly in male-dominated roles like coaching or management (Solanas, et al., 2022). Zero-tolerance policies for harassment, family-friendly workplace practices, and diversity training programmes are some of the workplace regulations that promote gender-inclusive environments (Azmat & Boring, 2020; Henriquez-Caballero, 2024; Sullivan, 2022). Establishing networks within SPA organisations that include both women and men can also foster community and support (Burton, 2021; González-Rivera et al., 2017; Spoor & Hoye, 2014). Changing workplace culture requires intentionally disrupting informal norms and practices that maintain male dominance. Formal policies with operationalised regulations signal a commitment to equity and help redefine acceptable behaviours and expectations.

Redefine leadership norms.

Leadership roles in SPA organisations are predominantly held by men, reflecting deep-seated perceptions that associate authority and decision-making with masculinity (Clayton-Hathway & Ulrike, 2019; Joseph & Anderson, 2016). Challenging these stereotypes involves promoting and normalising diverse leadership styles that value collaboration and inclusivity. Recognising and celebrating successful women leaders in SPA can help disrupt these biases and provide visible role models. In sport organisations, redefining success beyond the traditional "winning at all costs" model may attract more women to pursue leadership positions (Adriaanse, 2017). Additionally, implementing policies that ensure gender diversity within leadership pipelines is crucial. Shifting leadership norms requires reframing notions of legitimate authority and creating new templates for leadership that include diverse gender perspectives (Foppiano-Vilo et al., 2022). Promotional campaigns focusing on gender equality in sport management could include recognising outstanding professional women and sharing their biographies on the official websites of

public sport sector agencies (Alfaro et al., 2018).

Establish monitoring and accountability mechanisms

Addressing gender disparities in the SPA industry requires more than well-intentioned policies; it demands robust monitoring to track and evaluate progress. Without these mechanisms, initiatives risk being superficial, short-lived, or ineffective. Gender audits and regular reporting on workforce composition, salaries, and career progression by gender must be established. These metrics reveal inequities and identify patterns of prejudice or structural barriers within SPA organisations (Stamarski & Son Hing, 2015). Linking organisational funding or recognition to progress on gender equity metrics is essential in safeguarding accountability and making progress toward gender equity a visible priority (Acosta et al., 2020; Cansino et al., 2021; Henry et al., 2017). Ultimately, robust monitoring shifts gender equity from a peripheral concern to a core SPA industry value, enabling sustainable and systemic change (Alfaro et al., 2018; González-Rivera, 2016; Pati & Doherty, 2023).

Engage stakeholders across levels

Researchers have indicated that resistance to gender equity initiatives is common in organisations, often stemming from a defence of existing norms and identities (Bleijenbergh, 2017; Knoppers et al., 2021; Soler et al., 2017). Engaging all stakeholders in SPA, including male allies, is crucial for successfully implementing gender equity policies (López de D´Amico & González-Rivera, 2021; Madsen et al., 2022; Nash et al., 2021; Anicha et al., 2020). Regular dialogues must be conducted to educate and engage SPA stakeholders about the importance of diversity and inclusion and address resistance through transparent communication. Engaging stakeholders disrupts the social inertia that sustains exclusionary practices, aligning individual and collective behaviour with reformed institutional norms. The dissemination of national and international laws and standards on women's right to equality in managerial and technical roles within the SPA sector could also be enhanced. This can be achieved by regularly providing sport institutions and organisations with updated equality legislation relevant to the sport industry.

Initiate policy advocacy for broader systemic change

Achieving gender equity in the SPA industry requires a multilevel approach addressing individual, organisational, and societal factors. Policy reforms that mandate equitable hiring practices, enforce gender equity in leadership, and incentivise organisations to achieve gender diversity benchmarks must be incessantly pursued and institutionalised. Collaborations between SPA organisations, academe, government and non-government agencies, and advocacy groups can amplify these efforts. Systemic policy interventions reshape the broader regulatory and cultural environment, embedding new norms that transcend individual organisations (Burton & Leberman, 2017; González-Rivera & Álvarez-Llergo, 2023; Sotiriadou & de Haan, 2019).

These recommendations, driven by this study's findings and informed by institutional theory and intersectionality, emphasise the need for intentional, systemic interventions to dismantle entrenched inequities and foster lasting change in the SPA labour market in and beyond the Madrid region. These strategies aim to create a more equitable and inclusive field that fully utilises women's potential in all SPA roles by addressing both formal structures and informal norms.

In conclusion, this study has illuminated the gender-specific characteristics of SPA employment, serving as a foundational step

toward advancing gender equity in the SPA labour market, particularly in the Madrid region. While the findings are particularly relevant to the Madrid region, their implications extend beyond this context, offering insights applicable to SPA labour markets globally. Implementing programmatic and policy interventions to improve service quality, transparency, and professionalism is crucial for creating equitable opportunities for women and addressing deeply entrenched gender disparities within the SPA industry. By promoting gender-informed initiatives that address ingrained norms and biases, recommendations can be tailored to diverse contexts and cultures facing similar gender disparities in SPA industries worldwide.

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The Official Journal of the International Society for Comparative Physical Education and Sport

ORIGINAL RESEARCH

Women in Physical Education and their Career Development: Current Trends and Issues

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Abstract

Participation in physical education (PE) is a fundamental right for every student (UNESCO, 2012). The quality of learning in PE depends on several factors, including access to facilities, learning opportunities, well-designed curricula, and effective teaching by qualified professionals. While PE teaching is a career open to both genders and protected by policies that ensure equal working opportunities, female professionals often face unique challenges in pursuing and advancing in this field. This study examines the career choices of female PE professionals, focusing on the social constraints they encounter and their implications for women pursuing careers in the field. It also investigates gender-specific perceptions of Quality Physical Education (QPE) to identify differences across key dimensions of QPE. This study draws on data from a global survey on QPE conducted between 2020 and 2021. Using a 49-item questionnaire developed by the International Society for Physical Education and Sport (ISCPES) research team, the study engaged 5,680 professionals comprising 2,431 women and 3,249 men. Respondents were primarily from Asia, the Middle East, and Central and South America, with fewer participants from Europe and Africa. This study employed the boundary concept and compromising practice framework to analyse trends in women's career choices, social and professional challenges, and prospects in PE careers. Findings revealed that both genders exhibited similar attitudes toward QPE development, with no significant differences in the overall score by gender. Nevertheless, women expressed more positive perceptions of QPE at the primary level than men.

Keywords:
Career Development, Women in Physical Education, Boundary Concept, Compromising Practice, Gender Equality

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Introduction

Providing physical education (PE) in schools is crucial for ensuring younger generations learn and develop life skills. A United Nations Educational, Scientific and Cultural Organization (UNESCO) survey (2024) revealed that 83% of countries declared PE compulsory, affirming its vital role in youth development. An adequate PE programme requires specific essential components, such as appropriate curriculum arrangement, various learning opportunities, and effective teaching methods. Successfully implementing these quality outcomes requires qualified professionals like PE teachers, sports coaches, and curriculum coordinators.

Becoming a PE teacher is a career choice for many young people. This is a career for everyone, and women and men are expected to work on equal terms and have the same opportunities for career success. The global trend shows a rise in the number of women in education. A chapter on 'Gender differences in career expectations and feminisation of the teaching profession' (Encinas-Martín, 2023) in the Organisation for Economic Co-operation and Development (OECD) 2023 report 'Joining forces for gender equality' provided data showing more women selecting service professions such as teaching and nursing than men. Findings revealed that in 2020, women were primarily over-represented among new entrants in education or health and welfare. For example, on average, across OECD countries, the proportion of female teachers reached 70%, with significant differences across levels of education. Female teachers were especially overrepresented at lower levels of education.

Moreover, 82% of the primary teachers were women, compared to 63% at the secondary level and 45% at the tertiary level on average across OECD countries (Encinas-Martín, 2023). Similarly, Eurostat (2023) reported that 5.24 million teachers in European Union countries were employed in primary, lower secondary, and upper secondary education, with women comprising 73% (3.8 million) of the total and men accounting for 27% (1.43 million) in 2021. Women appear to favour careers in education or teaching and may relate to the gender stereotypes in education (Encinas-Martín, 2023).

Although the number of women entering educational careers is rising rapidly, their experiences pursuing careers in PE differ significantly. According to ZIPPIA (2021), a career data company based in the US, the demographic information of PE teachers shows that of 28,563 PE teachers, 39.4% are women, while 60.6% are men in 2021. Moreover, the data highlighted a gender pay gap, with male PE teachers earning an average annual salary of USD 46,999 compared to an average salary of USD 45,601 for female PE teachers. The pattern of male dominance in PE teaching positions occurs not only in the US but also in other countries.

In China, it was estimated that 26% of female teachers worked in primary schools, and 20% worked in both junior and regular senior secondary schools (Wang et al., 2021). Terayama and Yagi (2021) mentioned that approximately 62.2%, 43.3%, and 32.1% of female PE teachers in Japan worked in elementary, junior high, and high schools, respectively. Most male PE teachers worked at the secondary level. The situation was even astonishing in places where PE was difficult to access in schools. PE teachers have been available in 82% of schools in Bangladesh (Shefali, 2021). The male-to-female PE teacher ratio was 65:34, while the male-to-female student participation ratio in sports was 60:40. The findings also revealed that, in co-educational institutes, all PE teachers are men. There are no women-friendly environments that promote girls' sports. There were 64 district sports officer positions in Bangladesh, but no female sports officers were recruited (Shefali, 2021).

Al-Sinani and colleagues (2021) reported similar trends in Arab countries. Their study indicated that male researchers dominate in the field of PE study. Women specialists in PE and women sport coaches remained sparse across Gulf countries. Turakhanova and Kasymova (2021) found a similar situation in Tajikistan. The enrolment of girls in higher educational institutions on physical culture and sport was 1%, with only 14 of 1,248 students. In the 2016-2017 academic year, 1,670 students were enrolled in the Tajik Institute of Physical Culture, and only 17 women were among them.

Khan and associates (2012) analysed the job of female PE teachers in a province of Pakistan. The female PE teachers were assigned jobs in the organisation of sporting

events and taught PE at senior secondary and undergraduate levels. Although the female PE teachers were assigned teaching jobs, they had no sports background and were not interested in sport-related fields. They entered the teaching field in PE by chance rather than choosing it as a career. Because of their inadequate knowledge of sport activities, they were not respected in the profession and failed to earn the necessary prestige from society compared to teachers of other subjects (Khan et al., 2012).

Project World Impact (2021) highlights women's rights as a vital issue influencing the well-being of communities and global social justice. Of the 195 nations worldwide, 143 have constitutionally guaranteed equality between men and women. Although a notable achievement is recorded, it requires careful interpretation. Hargraves (1990) cautions that while these constitutional guarantees reflect quantitative achievement, they do not necessarily translate into qualitative changes. The battlefront is divided into two sides. It involves not only job opportunities for female professionals but also the job culture within the workplace. This "job culture" is concealed behind social norms, traditions, religious practices, and everyday work dynamics, which can either support or hinder women's advancement. Achieving quality growth for women professionals in PE teaching is another story. Globally, disparities exist, with some countries having made significant strides in increasing the number of women in the profession. However, the quality of the work environment still needs improvement. Nevertheless, many nations are still struggling to achieve even basic levels of gender equality in job access. This study draws on data from recent research in QPE to explore the experiences of female PE teachers, examining their career aspirations and the challenges they face. This study explores current trends of career choices by female professionals, the underlying challenges from social constraints, and the impacts and prospects for women pursuing careers as PE professionals.

Methodology

Participants

The sample adopted in this QPE study consisted of 5,680 PE professionals, 57.2% men and 42.8% women. Data were collected with the assistance of research partners from four continents and completed before mid-2021. Invited professionals came from Asia (57.2%), Latin America (32.6%), Europe (5.8%) and Africa (4.4%). All participants were primary or secondary school PE teachers or professionals in the field of PE in universities or government-educational authorities and school supervisors responsible for developing PE curricula. Research partners recruited participants during local seminars, meetings, and training activities, and a questionnaire was delivered offline or online via the Google platform at the mentioned events. Participation of these professionals in the questionnaire survey was voluntary and anonymous. Only those who signed a consent form to participate were included in the study. The first author's former institute approved the ethical clearance of the study with an approval number of SSHRE21-APP003-FED.

Research Tool

The Global Index of Quality Physical Education (GIQPE) questionnaire was adopted for this study. Methods and procedures of item development were discussed in articles by Ho and associates (2021; 2023). Items in this study were determined to be a good fit for investigation. The items were divided into eight dimensions, each describing one situation in QPE. The dimensions were: Skill Development and Bodily Awareness (SDBA) – 8 items; Facilities and Norms in PE (FNPE) – 13 items plus one additional item (to distinguish PE as a compulsory subject at school at primary and secondary levels, respectively); Quality Teaching of PE (QTPE) – 6 items; Plans for Feasibility

and Accessibility of Physical Education (PFAPE) – 2 items; Social Norms and Cultural Practice (SNCP) – 3 items; Governmental Input for PE (GIPE) – 5 items; Cognitive Skill Development (CSD) – 5 items; and Habituated Behaviour in Physical Activities (HBPA) – 6 items. A Likert scale scoring system from 0 to 10 was employed, with 0 representing 'fully not achieved' and 10 'fully achieved'. English was used as the original language in the questionnaire. The original language of the questionnaire was English. For those who were not proficient in English, translations or interpretations were available and carried out by the research partners from different cities. These research partners were proficient in English and native speakers of the language in the countries they lived or worked. The purpose was to guarantee a suitable understanding of the items before answering the questionnaire.

Data analysis

The study explored the current trend of career choice of female professionals in the teaching field of PE and their perceptual understanding in different dimensions. The following methods were employed with descriptive statistics and frequency analysis to understand the distribution of returning questionnaires from different groups. The significant differences in the proportion of female and male PE professionals were determined using the Chi-square test to determine whether there was a statistical difference between the expected and observed frequencies. An independent T-test was used to compare the differences between the achieved means among women and men in the overall QPE questionnaire and its dimensions because of the normality in data distribution according to the Kolmogorov-Smirnov test. Statistical analysis was performed using SPSS (Version 23), and the significance level was set at 0.5. The significance level was set at 0.05 for all statistical tests.

Results

This study investigated the proportion of men and women and their employment in PE based on questionnaires returned from the QPE study. Table 1 shows the distribution of men and women concerning work positions (primary school teacher, secondary school teacher, and 'others'), type of school system, years of work experience, and the chi-square test results and significance. Significantly more men than women worked as PE professionals. A significant difference was not evident between male and female PE teachers at the primary level.

Table 1. Frequencies and Chi-square test results of participants by gender, position, school type, and years of work experience

	Male	**Female**	**Total**	**Chi-square**	**p-value**
Gender	3249	2431	5680	117.804	.000
Position					
Primary	978	950	1928	.407	.524
Secondary	1259	794	2053	105.321	.000
Others	854	584	1438	50.695	.000
School Type					
Government	2015	1528	3543	66.940	.000
Private	560	367	927	40.182	.000
Others	160	135	295	2.119	.146
Years of work experience					
1-5	1227	982	2209	27.173	.000
6-10	566	397	963	29.658	.000
11-15	434	313	747	19.600	.000
16-20	288	264	552	1.043	.307
21-25	231	139	370	22.876	.000
26-30	160	98	258	14.899	.000
31-35	130	79	209	12.445	.000
36-40	47	42	89	.281	.000
41 above	48	24	72	8.000	.005

Table 2 presents the proportions of men and women working in PE across Africa, Asia, Europe, and Latin America, along with the corresponding Chi-square results. In this sample, more questionnaires were returned by men than women who worked in PE. However, a notable exception was observed in Africa and Asia, where significantly more women working in primary schools responded than their male counterparts. This unexpected pattern prompted the research team to delve deeper into the social factors influencing women's career choices and their challenges when pursuing PE teaching roles in primary schools. The investigation also explored how these factors impact both teaching practices and student learning outcomes in these regions.

Table 2. The proportion of both gender and their position in different continents and Chi-square statistics

	Male n (%)	Female n (%)	Total	Chi-square	p-value
		Africa			
	135 (54%)	114 (45.6%)	249	1.771	.183
Teacher Primary	31 (35.2%)	56 (63.6%)	87	7.184	.007
Teacher Secondary	64 (60.4%)	42 (39.6%)	106	4.566	.033
Others	40 (71.4%)	16 (28.6%)	56	10.286	.001
		Asia			
	1679 (52.5%)	1476 (46.2%)	3155	13.061	.000
Teacher Primary	487 (44.2%)	604 (54.8%)	1091	12.547	.000
Teacher Secondary	653 (57.5%)	471 (41.5%)	1124	29.470	.000
Others	512 (56.3%)	389 (42.8%)	901	16.791	.000
		Europe			
	180 (55%)	147 (45%)	327	3.330	.068
Teacher Primary	50 (52.1%)	46 (47.9%)	96	.167	.683
Teacher Secondary	69 (52.3%)	63 (47.7%)	132	.273	.602
Others	60 (62.5%)	36 (37.5%)	96	6.000	.014
		Latin America			
	1255 (60.3%)	694 (32.6%)	1949	161.478	.000
Teacher Primary	410 (56.4%)	244 (33.6%)	654	42.135	.000
Teacher Secondary	473 (65.2%)	218 (30%)	691	94.103	.000
Others	242 (61.6%)	143 (36.4%)	385	25.457	.000

Another study objective was to investigate the differences in responses to the QPE questionnaire and its dimensions between genders. Table 3 shows the data from four continents. Means are compared for genders in the same continent. The average mean for women was higher than for men in Asia and Africa in all dimensions and QPE. In Asia, significant differences were observed in the PFAPE dimension. In Africa, there were significant differences in PFAPE, SNCP, GIPE, HBPA, and QPE (overall). A different pattern is observed in Latin America. Men attained higher mean scores in each dimension, and QPE (overall) was also high among men. Significant differences were observed in the QTPE dimension. There was no evidence of significant differences between dimensions in Europe. Female professionals had a higher mean score than male professionals.

Table 3. Gender differences in the overall QPE and eight corresponding dimensions

	SDBA	FNPE	QTPE	PFAPE	SNCP	GIPE	CSD	HBPA	QPE (overall)
Asia									
Male	6.80	6.93	6.71	6.18	6.5	6.36	6.54	6.61	6.69
Female	6.95	7.04	6.82	6.43	6.65	6.44	6.66	6.71	6.81
T-test	1.885	1.549	1.318	2.658	1.729	.934	1.460	1.180	1.587
Sign	.059	.121	.188	.008	.084	.350	.144	.238	.113
Latin America									
Male	7.00	6.93	7.35	5.50	6.14	6.18	6.89	7.14	6.83
Female	6.83	6.76	7.15	5.29	6.01	6.05	6.75	6.98	6.67
T-test	1.739	1.862	2.225	1.349	1.043	1.037	1.226	1.559	1.720
Sign	.082	.063	.026	.177	.177	.300	.220	.119	.086
Europe									
Male	6.30	6.86	6.50	4.57	5.63	5.10	5.83	5.99	6.17
Female	6.52	7.07	6.68	4.55	5.79	5.23	5.94	6.04	6.32
T-test	1.171	1.257	.976	.070	.709	.629	.536	.265	.867
Sign	.244	.210	.330	.944	.479	.530	.592	.791	.387
Africa									
Male	5.64	4.99	5.07	4.01	3.59	4.06	5.44	5.11	4.95
Female	6.03	5.32	5.52	4.61	4.48	4.80	5.82	5.78	5.43
T-test	1.588	1.515	1.590	2.069	3.102	.677	1.394	2.142	2.082
Sign	.114	.131	.113	.040	.002	.007	.165	.033	.038

Discussion

The study invited 5680 professionals in PE from Asia, Latin America, South America, the Middle East, Africa, and Europe to answer a questionnaire. Female professionals comprised 42% of the total, and male professionals accounted for 57%. In Asia, female participants outnumbered male PE professionals at the primary level in returning the questionnaires. Madagascar and Nigeria were two countries involved in this research and a similar situation was observed in these two countries. Overall, the number of questionnaires from both genders reflects a gradual decrease in the number of secondary positions in universities or posts in schools for female professionals. The number of returning questionnaires caused the research team to investigate the actual situation of women teaching PE, and individual reports in other countries provided corresponding evidence to describe the career situation.

Terayama and Yagi (2021) described the career situation of PE teachers in Japan and a higher percentage of female professionals in PE would like to work in primary schools, and the percentages were 62.2%, 43.3%, and 32.1% for job engagement in elementary, junior high, and high schools, respectively. Approximately 26% of female PE teachers in China work in primary schools and 20% in junior and regular senior secondary schools (Wang et al., 2021). In the region of Taiwan, 30.64%, 39.03%, and 35.25% of female PE teachers work in primary, secondary, and vocational high schools (Ministry of Education, 2019). The 2019 report by the OECD on gender and education stated that, in many countries, there are more female teachers than males in primary and lower secondary schools. Nevertheless, when it comes to teaching PE and health education (HE), the overall situation indicates more men are pursuing careers in these fields. This creates a concerning scenario, as the limited number of female teachers means fewer role models

for students. The OECD (2019) report also highlighted the challenge involving the scarcity of female PE teachers, compounded by persistent gender stereotypes in teaching approaches. These stereotypes can influence the way PE is taught, potentially reinforcing traditional gender roles rather than promoting inclusivity.

To understand this stereotyping behaviour, Verbrugge (2012) highlighted the tradition of sexism and gender stereotyping in the profession of female PE teachers. Aron (2017) reviewed this and highlighted how professionalism among female PE teachers developed in the early 20th century. At that time, there was significant growth in exercise programmes in public schools, and many young women joined the profession to become PE teachers. Those who engaged in the profession were either athletes who wanted to continue their enthusiasm for sport or discovered PE through physical therapy after an injury. During their training, they were trained to be 'ladylike' or 'to teach like a lady'. Female PE teachers were expected to look feminine but behave virtuously, look strong and vigorous but earnest, and be willing to accept being underpaid.

The shadow of the stereotyping behaviour described by Verbrugge (2012) in the early days seemed to no longer exist in modern education for PE professionals but was replaced with other concerning issues in education. For example, studies from the 1990s indicate the robust construction of gender differences and masculinity image in PE (Clarke, 1998; Griffin, 1989; Wright, 1997); thus, there is a preference for separated class teaching for male and female students. Berg and Lahelma's (2010) study in Finnish secondary schools revealed gender-segregated PE. Male teachers were usually assigned to teach boys, while female teachers taught girls. The reason for this class arrangement is complex. Berg and Lahelma (2010) observed the link with the general perception of a higher demand for male students to develop masculine efficiency in sports activities; conversely, it was suggested that there was a lower demand for girls' performance. Separate class arrangement seems to solve the differences in masculine demands between boys and girls.

Berg and Lahelma (2010) further described the boundary concept as indicating teachers' preferences while teaching the subject in separate class arrangements. Their report described an example of the borderwork in PE. Teachers maintained their teaching with their understanding of differences by invoking the gender boundary. Some individual boys or girls might cross this boundary (a boy learns to dance), but as the teacher moves to the group teaching (boys as a group), the teacher goes back to reinforce the demand for masculine efficiency. What follows are the differentiated instructions of teachers according to students' gender', and the general conceptualisation of gender turns out to be a boundary in giving teachers what and how to respond. The extent to which these gender stereotyping boundary preferences in teaching may affect women's perception when they take over a career as a female PE professional is still unknown. Itani (2005) described the boundary of gender culture as the cause of shaping our career practice and satisfaction and, in turn, limiting the choice preferences when considering a career as a professional in teaching PE. Itani (2005) discussed different hurdles affecting teachers' preferences in teaching PE, and one was related to PE curriculum and teacher behaviour. The masculine principles of strength, bravery, winning, and so on were dominant during the interaction in class. There were different expectations for men and women in the classroom teaching, which helped create the different school roles. Male teachers had a masculine role and expected severeness and toughness in boys.

On the other hand, education for women was deeply rooted in the culture of

dance education for girls. Itani (2005) further discussed the practice of the company-style office atmosphere in Japanese schools and the emphasis on long working hours and holidays. The gym and office culture of PE reinforced male dominance and left female PE teachers on the sidelines. This boundary concept, along with the authentic practice of the masculinity culture and gender differences in the workplace, may eventually support the growth of a different perspective for social relationships and career development between men and women who work in the same field (Ginsburg, 1987).

There have been attempts to solve this issue by taking different measures. Independent observations seem to reflect attitudes of refusal towards solving issues of gender differences. For example, McKenzie and colleagues (2004) mentioned the vigorous promotion of co-education under the Public Law of 92-318 in the US. Resistance to having a single-sex class arrangement in middle schools, however, remained strong due to preference for choice. The co-education model has also been adopted in China, but this one-size-fits-all system raises concerns. PE inspires the natural desire for conquest and achievement in male students but not in female students. Wang and associates (2021) stated that most PE teachers consider this to be a normal phenomenon and even ignore the presence of gender inequality in school sports, which not only leads to the generally poor sports performance of girls and a low sense of participation but also affects the implementation of equality in education.

For this, we must understand that such practice for separate class arrangements for boys and girls and masculine efficiency development is reinforced by our culture and general practice. For example, Vertinsky and colleagues (2005) discussed the colonial influence of Britain and gender-made arrangements to teach PE in Hong Kong SAR. Schools in this city followed the British tradition of class segregation. This practice was common and became a curriculum practice, especially at the secondary level. The Kingdom of Saudi Arabia has a separate system for educating female students for religious reasons (Shahab et al., 2021). Male and female students did not mix for PE lessons. In Japan, sex-specific health and PE curricula classes were required in the past because females attended dance classes, and males attended martial classes, such as judo and kendo (Terayama & Yagi, 2021). These kinds of stereotyping and masculinity culture seem to be reinforced by cultural norms and practices and serve as a challenge for the women who would like to choose PE as their profession for their career development. When Vernet and Butera (2005) investigated the wave of feminism development, they were concerned with women's complete control of their bodies. The present situation indicates a freedom of career choice for women in the PE profession. Nevertheless, it is necessary to move forward and investigate a hidden practice for social compromise and a balance of masculinity and femininity culture in the workplace; it will enable an equal contribution of both genders in the teaching works of PE in school.

Female PE professionals strongly preferred teaching in primary schools in Asia. This scenario suggests a different perspective for investigation. Although most women in Macao SAR can make independent decisions regarding their careers, when raising a family, some stop working and follow the tradition of staying home (Macau News, 2017). This indicates the existence of a compromising practice when a career decision is made. Meanwhile, in Singapore, Chan and Protzen (2018) stated that by splitting responsibilities, both partners share gains and losses; thus, to establish balance in a situation involving compromise, both genders must decide. Women considering jobs in primary schools as their first preference reflects the decision to compromise after the division of labour in society or family needs (Van Damme,

2017). This parental concept plays a role, especially among younger generations of women who value motherhood more than their baby-boom mothers do. Teaching jobs in schools may allow teachers to work part-time and flexibly combine work, family life, and the care of one's children. This fact seems more appealing to women and may serve as a reason for the strong preferences of female professionals who want to work in primary schools.

This study examined QPE across its eight corresponding dimensions using gender as a critical variable. Regarding average perceptions, female PE professionals had a higher perceptual index than their male counterparts in Asia, Europe, and Africa, but not Latin America. Overall, there were also no significant differences between the genders, except in some isolated dimensions. Notably, African female professionals significantly differed from males in at least four dimensions: PFAPE, SNCP, GIPE, and HBAP. Both genders' close perception of QPE indicates a shared cognitive understanding of PE in schools. This may be related to increased educational awareness among female PE teachers and changing their roles and responsibilities in schools. UNESCO's reports (2013, 2016) have highlighted this trend, noting that supporting women's empowerment relates to the improvement of educational opportunities for girls. The improvement of educational opportunities and the introduction of educational reform for girls are happening worldwide; however, the scope of the reforms and procedures varies across regions, as they must be adapted to the local context.

There are two main approaches to implementing comprehensive education policies. The first must focus on establishing equal terms that support educational rights and quality education for both genders. The second must stipulate targeted measures for reducing discrimination against specific groups. This approach implies giving extra attention to issues safeguarding women's rights. In places where there is insufficient development of educational opportunities for females, intentional consideration of such issues in policymaking and program interventions appears to be the appropriate strategy for dismantling barriers and ensuring equal access to educational opportunities.

'Gender equality is not a women's issue but affects both women and men, as it is rooted in the relationship between the two' asserts in the opening page of a Scottish Catholic International Aid Fund (SCIAF) report on the topic of 'Promising Practices: Empowering Women, Empowering Communities' (SCIAF, 2019). Furthermore, the report also stated that 'both women and men have to change their way of working, attitude, and social norms to ensure both are equal, empowered, and dignified'. Nevertheless, the initial stages of female professionals' involvement in PE did not follow this sentiment. Coakley (2015) remarked that stereotyping was used to limit opportunities for women's participation in physical activities worldwide. In addition, the reality of our society eventually wraps this stereotyping practice with boundaries, and the decision is tied up with compromising needs in society and family.

Moreover, compromising practices reinforce gender practices and stereotyping ideas. Although there are more women in education, this does not change their view of masculinity culture and the male dominance concept in PE. This may be an issue worth considering. Equal opportunities for career development for both genders are needed. Nevertheless, the focus should be on more than just quantitative change. It is necessary to pay attention to the hidden culture, as this is the real agent shaping the professional development of females in PE.

Concluding Remarks and Recommendations

This study reflects a scenario in PE, where more women express interest in pursuing PE as a career, and many of them choose to

have their teaching work in primary education. However, female representation declines at higher levels, such as secondary schools, universities, or other related institutions. Women remain underrepresented in senior academic roles and hold fewer influential positions within decision-making structures, limiting their numerical presence and influence within academia. Female PE teachers encounter challenges related to a dominant masculine culture, entrenched gender stereotypes in teaching approaches, and the added social demands and responsibilities of family life. Women in the PE profession face subtle yet significant barriers that hinder the career progression of women in PE. Interestingly, the perspectives of female PE teachers in this study suggest a perception of professional equality, indicating a belief in the scope and value of the PE profession across genders. While this finding may indicate a positive attitude of 'we are the same, and there is no difference,' it also raises questions about whether such perceptions might influence women's career choices in PE.

To support female professionals in PE, it is essential to address the different structural and cultural issues, including religious norms, professional etiquette, workplace environment, policies on equal pay, and the role of unions in advocating for women's rights. The rising numbers of female professionals in teaching PE may indicate a positive trend of job equality in career development. Nevertheless, it is essential to review the core problems behind the change. Recommended strategies include creating partnerships with educational authorities to deliver workshops for teachers to discuss the gender role in teaching, presentations at seminars or conferences to address the stereotyping issue of class experiences in sport learning, increased focus on social and family support for female teachers, impose a fair and comprehensive review structure for job promotion and scaling-up research in evidence-based pedagogical practices may help to improve the current condition of females in their profession in PE. This study's result may contribute to further understanding of the barriers and challenges towards the career development of female professionals in PE teaching.

Several limitations are associated with our reviews. Although there was an attempt to identify the global circumstances of females in teaching PE, the research mainly included information from countries in Asia and Latin America. Limited responses were received from Europe, Africa, and North America. It could not have a complete review of career development for females in PE and hence restricted the generalisation of the findings to settings and countries with diversified social, economic, and political backgrounds. Further study is needed to provide a validated conclusion to the current discussion. Despite the limitations, the study should be valuable in bringing attention to the current situation and challenges for female professionals working in PE. To close the discussion, the SCIAF (2019) report asserted that 'neither women nor men can flourish without one another, and there is no sustainable path to development, poverty reduction, and eradication of hunger without gender equality'. This study underscores the importance of gender equality and recognition of differences in achieving high-quality education for future generations. Without these, genuine progress in the PE profession—and in education as a whole—remains out of reach.

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Ethics Approval
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ORIGINAL RESEARCH

Melodic Movements: The Role of Music in Shaping Sport Performance and Psychological Responses

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Abstract

The application of music in sport can enhance training and competition performance. This study explored the effects of different music genres on students' emotional, psychological, and athletic performance. Motivational music (e.g., blues, jazz, classical) has reflective and complex qualities, with a tempo of 60-80 beats per minute; high-tempo music (e.g., rock, heavy metal, alternative) has intense and rebellious characteristics, with a tempo of 120-140 beats per minute; upbeat music (e.g., pop music, New German Wave), film music, and popular German music have cheerful and traditional qualities, with a tempo of 100-130 beats per minute; rhythmic music (e.g., soul/R&B, rap/hip-hop, and electronic music), have strong rhythmic features, with a tempo of 80-100 beats per minute; and self-selected music is chosen by the participants based on preference. Using a structured questionnaire, data were collected from 400 students at Shandong Sport University (50.8% male, 49.3% female, ages 18-21) to assess demographics, music preferences (Short Test of Music Preferences), psychological responses (Sport Emotions Questionnaire (SEQ) and Attention Questionnaire (AQ-RARC), sport motivation (adapted from Gill et al., 1983), and physical performance (International Fitness Inventory). Results from the PLS-SEM analysis indicated a composite reliability (CR ≥0.7) and an average variance extracted (AVE ≥0.5), meeting the Fornell-Larcker criteria for the model's reliability and validity. Model fit indices (SRMR, RMSEA < 0.08; CFI > 0.90) and path coefficient (t-value > 1.96), confirmed significance, with an R^2 value > 0.3 and a Q^2 value > 0, demonstrating the model's explanatory and predictive power. Findings suggest that different music genres significantly enhance students' athletic performance and psychological well-being.

Keywords:
good health, motivation, music, physical activity, physical education, psychological responses, sport performance, well-being

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Introduction

The Effects of Different Music Genres on Sport Psychological Factors

Sport psychology examines the impact of psychological elements on athletic performance, encompassing constructs such as motivation, self-assurance, anxiety, concentration, objective establishment, mental imagery, and

collaboration (Eysenck & Brysbaert, 2018). Sport psychologists collaborate with athletes, coaches, and teams to facilitate the attainment of peak performance, the effective management of stress, and the successful surmounting of obstacles. Sport psychology utilizes research findings from psychology, sociology, physiology, and kinesiology to examine human behaviour in sport and apply this understanding to practical applications (Weinberg & Gould, 2023). The field of sport psychology has gained recognition since the 1960s and 1970s. It is currently experiencing rapid growth as researchers and practitioners strive for a more comprehensive and nuanced understanding of the psychological factors that impact athletic performance to better inform the design of interventions to assist athletes achieve their best performance (Khodi et al., 2022)., relaxation training, and biofeedback (James, 2007; Jones et al., 2017).

Psychological elements such as motivation, attention, and emotion play crucial roles in motor performance. Motivation is the inherent impetus that instigates and guides conduct toward a specific objective (Ryan & Deci, 2000). It is a multifaceted term shaped by various aspects such as personality, prior experiences, and environmental influences. In the realm of sport, motivation may be categorized into two types: intrinsic and extrinsic. Motivation that comes from inside, such as the drive to improve one's abilities and the desire to take pleasure in one's own activities, is known as intrinsic motivation. On the other hand, awards and recognition are examples of extrinsic motivation, which is impacted by factors that are external to the individual.

Attentional concentration is a vital psychological factor that greatly influences sport performance. Attentional control denotes the ability to focus attention on specific tasks or stimuli (Anghelcev, 2013). Attention is crucial for athletes, facilitating sustained concentration on performance and enabling responsive adaptation to changing external conditions. Previous research has examined the influence of attentional concentration on athletic performance (Jones et al., 2017; Kinanti et al., 2023). Several studies have established a connection between an individual's emotions and behavioural responses in physical activity and sport. Emotions represent complex and varied experiences that encompass a range of physiological and psychological responses (Folkman, 2020; Lazarus, 1991). Emotions in sport influence an athlete's performance by affecting arousal levels, attention concentration, and decision-making capabilities (Khodi et al., 2024). Research indicates that athletes who effectively regulate their emotions are more likely to perform better in high-pressure situations (Lane & Terry, 2000). Additionally, athletes who experience positive emotions, such as enthusiasm and joy, tend to exhibit higher motivation and improved performance compared to those who encounter negative emotions like anxiety and dread (Milona et al., 2024).

A substantial body of research has investigated the influence of music on PA levels and the associated enjoyment experienced by individuals. Tran Minh (2022) discovered that popular music increased speed, agility, and aerobic speed in female students, but Ouergui et al. (2023) discovered that favoured and loud music boosted physical performance and satisfaction in taekwondo jins. Kumar and Sivachandiran (2022) and Karageorghis et al. (2021) both found that music improved interest and satisfaction in

physical exercises, with Karageorghis emphasising the advantages of medium-tempo music during high-intensity interval training. Kinanti et al. (2023) and Röglin et al. (2023) provided additional support for these findings, with Kinanti demonstrating that fast-paced music boosted attention and Röglin discovering that a high-intensity exergame entertained youngsters. Mohamed et al. (2022) found that popular music has no long-term influence on the fitness of female pupils in physical education classes.

Moderate physical activity (PA) has a significant influence on the central nervous system by stimulating the endorphin production, which supports brain health (Consorti et al., 2021) and fosters a sense of ease and pleasantness, lowering both alcohol cravings and stress levels (Gawor et al., 2021; Shirehjini et al., 2023). When combined with rhythmic music, especially during high-intensity interval training, PA may increase endorphin production and generate sensations of relaxation and pleasure (Karageorghis et al., 2021). Exercise and music can also contribute to regulating autonomic and neuro-endocrine responses to psychological stress (Jawwad et al., 2022). However, the subjective enjoyment of PA also plays an essential role in strengthening the positive association between exercise and mental health (Kagawa et al., 2022). Mind-body activities such as Qi Gong can promote mental well-being by inducing eutonic relaxation (Goldbeck et al., 2021). Furthermore, musical movement patterns have been shown to boost divergent thinking in adults and improve cognitive functioning, particularly executive functioning, although further research is needed to clarify these effects.

The Impact of Various Genres of Music on Motivation, Attention, And Emotion

Music has long been used to boost motivation during PA, and there is a growing corpus of studies investigating the influence of different genres on motivational levels. Various research has looked into the effects of other music genres on motivation, attention, and emotions. Jakupčević et al. (2021) revealed a positive correlation between music absorption and emotion control, whereas a negative correlation was identified for mindfulness (Khodi, 2021). Rock music has been demonstrated to improve emotion, elicit emotions, and inspire listeners (Tripathy & Chaudhari, 2021). Different music genres may be effectively categorised based on their impact on cerebral hemodynamic responses, with deep learning models performing well (Abadi, Khairah, et al., 2022; Rahman et al., 2022). Musical regulation of emotions can potentially impact attentional performance, notably the arousal component (Fernandez et al., 2021). Background music can interact with cognitive regulation, and judgements of musical arrangements are essential (Motevalli et al., 2022; Yoo et al., 2022). Musicians modulate their emotions throughout practice to support their goal orientation, with others preferring a mixed emotional state (Breaden Madden & Jabusch, 2021).

Furthermore, numerous studies have shown that emotions significantly influence physical performance during PA. Banu et al. (2022) found that engaging in physical activities can minimise fatigue and improve academic achievement. Both Liu et al. (2023) and Homagain and Ehgoetz Martens (2023) proved that emotional states had an impact on physical performance, with emotions influencing emotion responses and gait metrics. Zhang et al. (2023) investigated the function of self-

compassion and stress in physical exercise, finding that self-compassion reduces psychological discomfort and increases barrier self-efficacy, whereas stress has a detrimental impact on sport performance. Finally, Meetei (2023) and Abadi, Tiis, et al. (2022) emphasised the benefits of sport and physical activities for academic success and general human growth.

Upbeat music, known for its fast speed and pleasant sentiments, has been demonstrated to improve alertness and emotion, enhancing desire during exercise (Pang, 2022). For example, (Terry et al., 2020) discovered that listening to upbeat music while cycling increased enthusiasm and decreased perceived effort. Motivational music, with lyrics and messages that encourage and promote positivity, also increases motivation (Ransom, 2015); Borges et al. (2021) reported increased motivation levels during sprinting exercises, while (Piatkowski et al., 2024) observed increased motivation and improved performance in weightlifting activities. Rhythmic music, recognised for its continuous beat and pace, enhances coordination and motivation in various physical exercises; Wang and Zheng (2022) found benefits in basketball tasks, while Ballmann (2021) saw increased motivation while running. Individually chosen music improves motivation and performance, as Clark et al. (2021) discovered in their studies on sprinting and treadmill activities. In another study, participants completed 400-meter time trials 5.07% quicker than control group participants (Karageorghis et al., 2019). (Hove et al., 2022) indicated that upbeat music significantly affects attention during exercise by enhancing arousal levels, improving emotional states, and promoting greater engagement and enjoyment. Additionally, rhythmic music facilitates a consistent tempo and pace during exercise, enhancing athletic performance and intensifying the subjective experience of flow (Thakare et al., 2017). Hutchinson et al. (2018) asserted that self-selected music enhances motivation and engagement by enabling individuals to select personally engaging music, thereby diminishing the perceived effort. Finally, Koelsch et al. (2019) demonstrated that self-selected music stimulates the brain's reward system, leading to increased motivation and positive emotions during physical activity.

The Impact of Psychological Factors on Physical Performance

Several studies have demonstrated the significant influence of psychological elements on physical performance, emphasising their diverse and critical function. Behm and Carter (2021) emphasise the relevance of empathy, self-efficacy, and self-confidence, demonstrating how these psychological attributes improve athletic performance by instilling optimism and drive. Rakhmatullayevna (2023) and Méndez-Alonso et al. (2021) emphasise the importance of psychological health, mental toughness, and resilience, stating that these characteristics are required for athletes to overcome obstacles and sustain high performance. Besides, Reyes-Bossio et al. (2022) and Yang (2022) indicated significant effects of psychological treatments, such as mindfulness practices and cognitive-behavioral methods, as well as the monitoring of psychological indicators, on athletic performance. These therapeutic methods include the monitoring of psychological factors. Both research by Di Corrado et al. (2021) and Zhang et al. (2023) suggested a more comprehensive perspective by investigating the association between physical and mental well-being. More

specifically, they highlighted the role of self-compassion in promoting extended physical activity and boosting the healing of injuries. When taken as a whole, these studies demonstrate that psychological factors are not only necessary for sport achievement but also for the enhancement of overall physical health and performance.

Proposed Theoretical Model

This study proposes a theoretical model, illustrated in Figure 1, as derived from the concepts of Attentional Focus Theory (AFT), Self-Determination Theory (SDT), and Affective Response Theory (ART). According to the Attentional Focus Theory (AFT), an individual's attention and arousal level during physical activities are impacted by music, which serves as an external stimulus. The Self-Determination Theory (SDT) underscores the significance of motivation, particularly highlighting the satisfaction of demands associated with autonomy, competence, and relatedness. When these criteria are met, individuals reveal improved intrinsic desire and engagement in the task, which is vital for enhancing physical performance in educational settings. The Affective Response Theory (ART) explains the emotional and hedonic emotions individuals experience during physical activity. Music can provoke noble emotional states, enhancing the enjoyment of physical activity, fostering engagement, and causing heightened intensity. This study's theoretical model suggests that various music genres serve as independent variables influencing the intermediate aspects of motivation, attention, and emotion, which in turn influence physical performance. By synthesizing several theoretical viewpoints, the proposed model offers an extensive comprehension of the effects of various music on psychological and physiological reactions during physical activities.

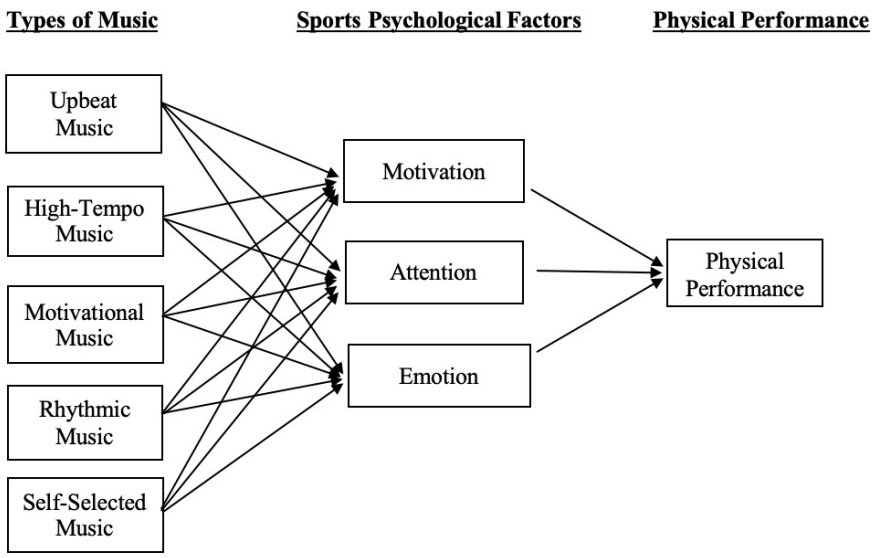

Figure 1. Proposed Theoretical Model

Method

Participants

The research recruited volunteers from Shandong Sport University, located in Shandong Province, China. Shandong Sport University was founded in 1958.

In 2000, it was established by a combination of the Provincial Institute of Physical Education and Technology and the Provincial Centre for Physical Education and Sports Research, receiving formal permission from the Government of Shandong Province. The sample size of 368 participants was established using the Krejcie and Morgan (1970) table, which is well-known in educational and social sciences research to determine the appropriate sample size depending on population size. Table 1 reveals that, for a population of roughly 8,380 students at Shandong Sport University, a sample size of 368 participants is adequate to get a 95% confidence level with a 5% margin of error. This approach yields a statistically valid estimate, guaranteeing that the sample size is sufficient to generate accurate findings. Besides, a G-Power analysis was performed to confirm the adequacy of the sample size. The G-Power study, a statistical power analysis tool, verified that a sample size of 368 participants is adequate to identify significant effects with a power level of 0.80, a standard threshold in research to reduce Type II errors. By integrating Krejcie and Morgan's table with G-Power analysis, we confirmed that the selected sample size is both statistically and practically sufficient for this investigation.

Table 1. Descriptive Statistics of Demographics, Listen to Music, and Music Preferences

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Gender	Male	203	50.8	50.8	50.8
	Female	197	49.3	49.3	100.0
	Total	400	100.0	100.0	
Current year of study	1	82	20.5	20.5	20.5
	2	130	32.5	32.5	53.0
	3	117	29.3	29.3	82.3
	4	71	17.8	17.8	100.0
	Total	400	100.0	100.0	
Listen to music while exercising	Male	186	46.5	46.5	46.5
	Female	214	53.5	53.5	100.0
	Total	400	100.0	100.0	
Music preferences during sport	High-Tempo Music	71	17.8	17.8	17.8
	Motivational Music	71	17.8	17.8	35.5
	Rhythmic Music	81	20.3	20.3	55.8
	Self-Selected Music	98	24.5	24.5	80.3
	Upbeat Music	79	19.8	19.8	100.0
	Total	400	100.0	100.0	

Table 5 shows that the actual sample had a relatively equal proportion of male participants, with 50.8% males and 49.3% females. In relation to the practice of listening to music during exercise, 214 ladies (constituting 53.5% of the female participants) and 186 males (representing 46.5% of the male participants) stated that they engaged in this activity. The results indicate that females were more inclined to use music to improve their PA experience. The largest enrolment was observed in Year 2, with a total of 130 students, accounting for 32.5% of the entire sample. The number of students in year three was 117, which accounted for 29.3% of the total. In the initial year, 82 students accounted for 20.5% of the sample. In the fourth year, they consisted of 71 students, which accounted for 17.8% of the total. This section accurately depicts the distribution of current academic levels among participants. It also offers insights into participants' music preferences, indicating the influence of different types of music on their PA experiences.

Validity and Reliability of the Questionnaires

The survey questionnaire used in this research was derived from previous surveys, particularly the STOMP (Short Test of Music Preferences) developed by Rentfrow and Gosling (2003), and later modified by Langmeyer et al. (2012). It was designed to assess four dimensions of music preference: motivational music, high-tempo music, upbeat music, and rhythmic music. Responses were assessed using Likert scales, which categorize data on an ordinal scale. The researchers employed five-point Likert scales to assess music preferences and emotions, and seven-point Likert scales to evaluate attention and self-reported physical performance, in accordance with the recommendations of Rentfrow and Gosling (2003) and Langmeyer et al. (2012).

This study explicitly differentiates between observable independent variables and latent variables. Music that individuals choose for themselves, as well as lively, fast-paced, motivating, and rhythmic music, are considered independent factors that directly affect motivation, attention, and emotion (which are hidden factors), and then influence physical performance (the final result). These genres of music are used as exogenous variables in our structural equation model (PLS-SEM) to examine their direct impact on reflecting latent variables.

In order to guarantee the accuracy and dependability of the measuring tools, we utilized the PLS-SEM methodology. The reliability of the model was evaluated using Composite Reliability (CR), which is particularly suitable for PLS-SEM. Additionally, Cronbach's Alpha was used. A CR score above 0.7 indicates satisfactory reliability. The validity of the data was evaluated by calculating the Average Variance Extracted (AVE), where values greater than 0.5 indicate satisfactory convergent validity. The Fornell-Larcker criterion was utilized to establish discriminant validity among the constructs.

Designing the Questionnaire

In this study, a methodical questionnaire, modified from prior survey items, was employed to assess individuals' inclination towards listening to music while engaging in physical exercise. The questionnaire items were derived from Rentfrow and Gosling (2003) concise music preference test, with slight modifications. The questionnaire consists of 13 items that cover four dimensions of music preference:

motivational music (e.g., blues, jazz, and classical music), fast-paced music (e.g., rock, heavy metal, and alternative music), upbeat music (e.g., pop music, New German Wave, movie music, and German pop), and rhythmic music (e.g., soul/R&B, rap/hip-hop, and electronica) (Brown, 2012; Langmeyer et al., 2012).

This study classifies self-selected, upbeat, high-tempo, motivational, and rhythmic music as independent variables. These variables are used to explore their impact on the three latent variables of motivation, attention, and emotion, ultimately affecting physical performance. These music-type variables are treated as exogenous variables in our PLS-SEM analysis.

The participants' motivation in sport was assessed using a questionnaire created by Gill et al. (1983), which encompassed eight categories: achievement/status, teamwork, fitness, energy release, situational considerations, skill development, friendship, and fun. The researchers employed the Sport Emotions Questionnaire (SEQ) to assess the primary emotions experienced by participants during physical activity, including enthusiasm, happiness, anger, annoyance, and anxiety (Jones et al., 2005). The SEQ consisting 22 items of emotions. The study utilized the Attention Questionnaire (AQ-RARC), developed and validated by Christakou et al. (2012), consisting of 10 questions to evaluate participants' attention levels during exercise. The researchers employed the International Fitness Inventory (IFIS) questionnaire to assess participants' self-reported physical performance and fitness levels while listening to music. This questionnaire addressed multiple dimensions, encompassing general physical fitness, cardiorespiratory fitness, muscular strength, speed and agility, and flexibility.

The structured survey questionnaire for this research was adapted from previous surveys, specifically the STOMP (Short Test of Music Preferences) by Rentfrow and Gosling (2003), later modified by Langmeyer et al. (2012) to cover four music preference dimensions: motivational music (blues, jazz, and classical), high-tempo music (rock, heavy metal, and alternative), upbeat music (pop, New German Wave, film music, and popular German music), and rhythmic music (soul/R&B, rap/Hip Hop, and electronica) (Rudan & Tarnai, 2012). The measurement of responses followed the Likert scale, placing data on an ordinal scale. Five-point Likert scales were used for music preferences and emotions, while seven-point Likert scales measured attention and self-reported physical performance, as recommended by the original sources. The PLS-SEM methodology assessed the reliability and validity of latent variables and associated indicators. Reliability measured consistency, while validity evaluated the accuracy of depicting fundamental concepts. The model's reliability and validity were confirmed by the Fornell-Larcker criterion, requiring a composite reliability (CR) of at least 0.7 and an average variance extracted (AVE) of at least 0.5.

Analysis of Data

The PLS-SEM methodology assesses measurement models by examining the reliability and validity of latent variables and associated indicators. The latent variables in this study include motivation, attention, and emotion. These variables are not directly observed but are inferred from multiple observed indicators. For example, motivation is measured using indicators such as self-reported enthusiasm,

willingness to engage in physical activities, and persistence. Attention is measured through indicators like focus duration, distraction frequency, and task completion rates. Emotion is assessed using indicators such as self-reported feelings of happiness, stress, and relaxation. We clearly distinguished between independent and latent variables in the data analysis. Self-selected music, along with upbeat music, high-tempo music, motivational music, and rhythmic music, are treated as independent variables. These directly impact changes in motivation, attention, and emotion (considered as latent variables) and, through these latent variables, further influence physical performance (the dependent variable).

These music type variables are analyzed as exogenous variables to assess their direct effects on the latent variables. For example, motivation is measured using a questionnaire with items such as 'I want to improve my skills,' 'I like to compete,' and 'I want to stay in shape,' which are rated on a scale from 1 (Strongly Disagree) to 5 (Strongly Agree). Attention is measured through items like 'My thoughts were concentrated on my goal,' 'My attention was distracted by irrelevant thoughts,' and 'I was concentrated on my performance,' rated on a scale from 1 (Not at all) to 7 (Very Much). Emotion is assessed using a list of feelings such as 'Joyful,' 'Nervous,' and 'Tense,' rated on a scale from 0 (Not at all) to 4 (Extremely). Reliability evaluates the consistency and dependability of measurements, while validity concerns the degree to which these measurements accurately represent the underlying concepts. The model's validity and reliability are confirmed through adherence to the Fornell-Larcker criterion, necessitating composite reliability (CR) of no less than 0.7 and average variance extracted (AVE) of no less than 0.5. This study selected SmartPLS-SEM for its capacity to manage complex models involving multiple latent variables and its robustness in addressing small sample sizes. This method facilitates the simultaneous analysis of multiple relationships and is capable of handling non-normal data distributions.

Additionally, SmartPLS-SEM offers reliable estimates for both formative and reflective measurement models, rendering it proper for the comprehensive analysis necessary in this study. The assessment of the structural model included analysing the model fit adequacy, the statistical significance and importance of the path coefficients, and the model's predictive capability. The model's fit measures, specifically the Standardized Root Mean Square Residual (SRMR) and Root Mean Square Error of Approximation (RMSEA) being below 0.08, along with the Comparative Fit Index (CFI) exceeding 0.90, met the acceptance criteria. Furthermore, the t-value of the path coefficient exceeds 1.96, signifying its statistical significance. A model exhibiting a R^2 value exceeding 0.3 and a Q^2 value greater than 0 demonstrates robust explanatory and predictive capabilities. These data unequivocally validate that various music genres have a substantial impact on improving athletic performance and psychological well-being.

Reliability Analysis

We evaluated the dependability and accuracy of this study as seen in Table 2.1 and 2.2. Dependability pertains to the degree of consistency in a study, and the Cronbach's alpha coefficient is a widely employed analytical approach. Coefficients ranging from 0.8 to 0.9 typically indicate a high level of

dependability. Validity analysis, also known as reliability, pertains to the measurement instrument's capacity to accurately assess the intended variable. High validity refers to the extent to which measurements accurately capture the true characteristics of the subject and establish a shared understanding of a variable among many researchers. A CR score exceeding 0.7 signifies a consistent explanation of the variable by the measurements inside each latent variable. The convergent validity of the dimensions was evaluated using variance extraction (AVE), where AVE values greater than 0.5 indicate strong convergent validity. The attention dimension, as measured by Cronbach's alpha (0.905), CR (0.921), and AVE (0.54), demonstrated strong consistency and reliability.

Table 2.1. Reliability and Validity Analysis of Constructs

Latent variable	Observed variables	factor loadings	Cronbach alpha	CR	AVE
Attention	c1	0.743	0.905	0.921	0.54
	c2	0.734			
	c3	0.707			
	c4	0.705			
	c5	0.755			
	c6	0.734			
	c7	0.721			
	c8	0.751			
	c9	0.736			
	c10	0.755			
Emotion	e1	0.716	0.956	0.960	0.522
	e2	0.713			
	e3	0.721			
	e4	0.711			
	e5	0.771			
	e6	0.709			
	e7	0.713			
	e8	0.738			
	e9	0.717			
	e10	0.735			
	e11	0.717			
	e12	0.722			
	e13	0.735			
	e14	0.709			
	e15	0.718			
	e16	0.718			
	e17	0.711			
	e18	0.713			
	e19	0.717			
	e20	0.704			
	e21	0.721			
	e22	0.758			
High-tempo Music	x4	0.853	0.846	0.906	0.764
	x5	0.894			
	x6	0.874			

Table 2.2. Reliability and Validity Analysis of Constructs

Latent variable	Observed variables	factor loadings	Cronbach alpha	CR	AVE
Motivation	m1	0.717	0.968	0.970	0.519
	m2	0.728			
	m3	0.707			
	m4	0.716			
	m5	0.709			
	m6	0.710			
	m7	0.707			
	m8	0.715			
	m9	0.713			
	m10	0.723			
	m11	0.732			
	m12	0.725			
	m13	0.721			
	m14	0.717			
	m15	0.729			
	m16	0.728			
	m17	0.724			
	m18	0.708			
	m19	0.702			
	m20	0.718			
	m21	0.721			
	m22	0.730			
	m23	0.741			
	m24	0.735			
	m25	0.725			
	m26	0.725			
	m27	0.731			
	m28	0.736			
	m29	0.708			
	m30	0.717			
Motivation Music	x1	0.859	0.807	0.886	0.721
	x2	0.835			
	x3	0.852			
Physical Performance	p1	0.765	0.806	0.866	0.563
	p2	0.753			
	p3	0.743			
	p4	0.759			
	p5	0.731			
Rhythmic Music	x11	0.874	0.858	0.913	0.779
	x12	0.897			
	x13	0.876			
Upbeat Music	x7	0.840	0.860	0.905	0.705
	x8	0.837			
	x9	0.839			
	x10	0.842			

Similarly, the emotion dimension, as measured by Cronbach's alpha (0.956), CR (0.960), and AVE (0.522), also exhibited strong consistency and reliability. The fast-paced music, with a Cronbach's alpha of 0.846, CR of 0.906, and AVE of 0.764, demonstrated strong performance in eliciting associated

psychological responses. The dependent variable, "self-selected music", was measured with a single item, so its confirmatory factor analysis results were not considered. The questionnaire, which incorporated motivational music, displayed reliability and convergent validity, as indicated by its Cronbach's alpha values of 0.807 and 0.806, CR values of 0.886 and 0.866, and AVE values of 0.721 and 0.563, respectively. The statistics not only establish the reliability and validity of the questionnaire measures, but also offer a quantitative foundation for comprehending the impact of music on physical performance.

Discriminant Validity

The Heterotrait-Monotrait Ratio (HTMT) approach was employed in this study to evaluate the discriminant validity among latent variables. A ratio below 0.85 was considered indicative of strong validity. Table 3 demonstrates that the HTMT ratios for the five music kinds (High-tempo, Motivational, Rhythmic, Upbeat, and Self-Selected) and the three psychological aspects (Attention, Emotion, Motivation) were all lower than the specified threshold, suggesting a satisfactory level of distinction. The ratios ranged from 0.300 to 0.471, demonstrating the distinct impact of various forms of music on psychological traits. The independent variable of Physical Performance exhibited HTMT ratios below 0.5 with all other variables, thus confirming the model's validity. To summarise, the HTMT results indicate strong discriminant validity, thereby supporting the overall validity and precision of the model's measurements. Further analysis employing the Fornell-Larcker criterion can yield additional verification.

Table 3. Discriminant Validity Using Fornell-Larcker Criterion

	C	E	H	M	MM	P	RM	SM	UM
Attention	**0.735**								
Emotion	0.313	**0.722**							
High-tempo Music	0.369	0.300	**0.874**						
Motivation	0.368	0.371	0.384	**0.721**					
Motivation Music	0.360	0.329	0.260	0.357	**0.849**				
Physical Performance	0.374	0.428	0.352	0.375	0.307	**0.750**			
Rhythmic Music	0.308	0.363	0.380	0.394	0.243	0.347	**0.882**		
Self-Selected Music	0.386	0.361	0.344	0.388	0.358	0.398	0.340	**1.000**	
Upbeat Music	0.400	0.396	0.454	0.433	0.347	0.403	0.423	0.373	**0.840**

This study utilised the Fornell-Larcker criterion to assess the discriminant validity. Table 4 shows that the square roots of the Average Variance Extracted (AVE) for each latent variable significantly exceed their correlations with other variables, thereby verifying their independence within the model. As an illustration, the square root of the average of the squared values for High-tempo Music is 0.874, exceeding its correlations with Motivation (0.384) and Attention (0.370). Moreover, the AVE values for all five music styles and the three psychological components (Attention, Emotion, Motivation) and Physical Performance exceed their correlations, indicating strong discriminant validity. This supports the previous HTMT Ratio analysis, further

confirming the model's capacity to differentiate between various constructs. The dual validation strategy, comprising the HTMT Ratio and Fornell-Larcker criterion, verifies that the latent variables in the research model are distinct. This enhances the validity and credibility of the findings.

Table 4. Path coefficient

Path	Coefficient	Standard Deviation	T-statistic	p-value
Attention-> Physical Performance	0.214	0.054	3.955	0.000
Emotion -> Physical Performance	0.291	0.052	5.606	0.000
High-tempo Music -> Attention	0.157	0.054	2.909	0.004
High-tempo Music -> Emotion	0.057	0.056	1.021	**0.308**
High-tempo Music -> Motivation	0.140	0.052	2.700	0.007
Motivation -> Physical Performance	0.188	0.061	3.096	0.002
Motivation Music -> Attention	0.179	0.051	3.492	0.000
Motivation Music -> Emotion	0.151	0.054	2.820	0.005
Motivation Music -> Motivation	0.159	0.050	3.190	0.001
Rhythmic Music -> Attention	0.072	0.049	1.479	**0.139**
Rhythmic Music -> Emotion	0.172	0.055	3.097	0.002
Rhythmic Music -> Motivation	0.172	0.052	3.280	0.001
Self-Selected Music -> Attention	0.180	0.052	3.455	0.001
Self-Selected Music -> Emotion	0.160	0.055	2.893	0.004
Self-Selected Music -> Motivation	0.156	0.051	3.079	0.002
Upbeat Music -> Attention	0.169	0.058	2.925	0.003
Upbeat Music -> Emotion	0.186	0.055	3.363	0.001
Upbeat Music -> Motivation	0.183	0.057	3.181	0.001

Figure 2 depicts a Structural Equation Model (SEM) employing Partial Least Squares Path Modelling (PLS-PM) approaches to evaluate the impact of various music genres on psychological attributes (such as motivation, emotion, and attention) and physical performance. The approach encompasses five distinct genres of music: motivational, fast-paced, uplifting, rhythmic, and self-selected. The relationship between these music categories and psychological qualities and physical performance was analysed predictively. The figure reveals latent variables, denoted by blue circles, and encompasses psychological qualities and physical performance. Observable variables are depicted as yellow rectangles, symbolising different music genres as observable indicators. The numbers on the connecting lines indicate route coefficients, which measure the level of correlation between the predictors and the outcome variables.

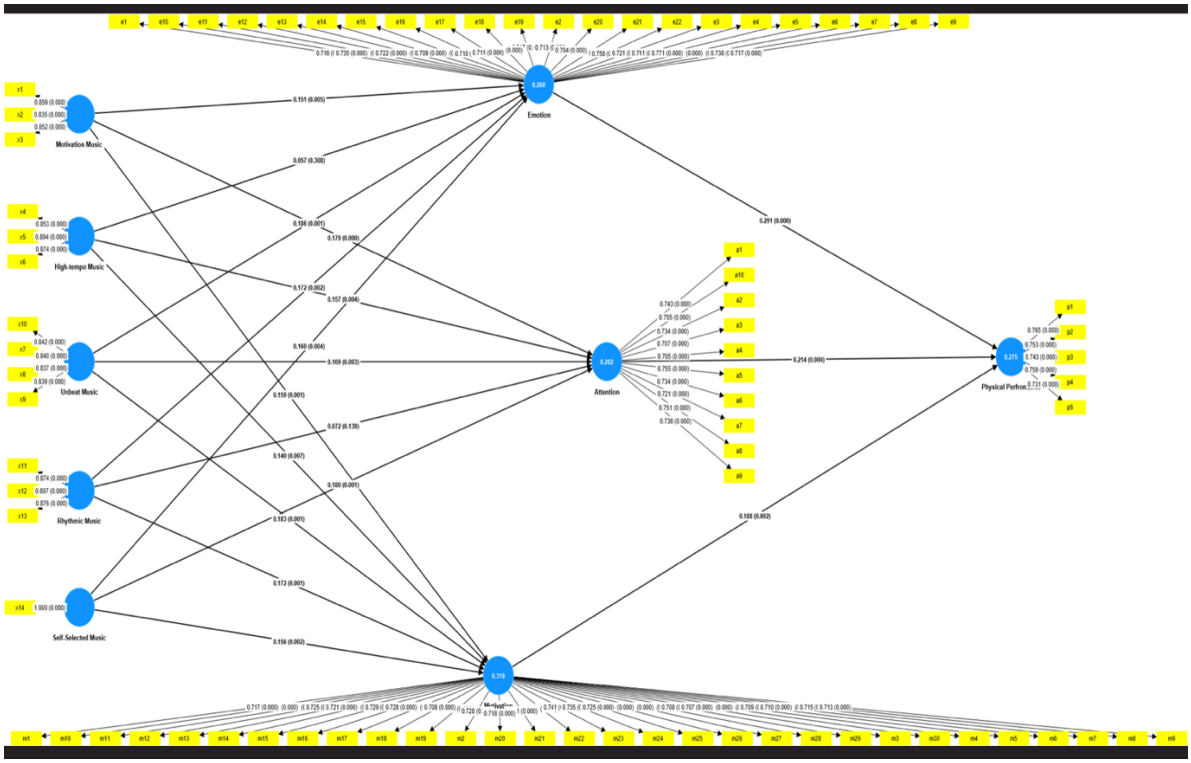

Figure 2. Partial Least Square Structural Equation Modelling Results

The structural model analysis, as shown in Table 5, revealed that attention and physical performance had a strong positive correlation (t-value = 3.955, p-value = 0.000). Additionally, emotion had a significant impact on physical performance (t-value = 5.606, p-value = 0.000), and motivation also had a statistically significant effect on physical performance (p-value = 0.002, t-value = 3.096). The presence of fast-paced music had a notable impact on both attention and motivation (p-value = 0.004 and 0.0007, respectively, with t-values of 2.909 and 2.700, respectively). However, it did not have a significant influence on emotion (p-value = 0.308, t-value = 1.021). The impact of motivational music on attention, emotion, and motivation was statistically significant (p-value=0.000, 0.005, and 0.001, t-value=3.429, 2.820, 3.190, respectively). Similarly, the effect of rhythmic music on these psychological aspects was also statistically significant (p-value=0.003, 0.001, and 0.001, t-value=2.925, 3.363, and 3.181, respectively). The participants' selection of music had a notable and beneficial impact on their focus, emotional state, and drive (p-values varied from 0.001 to 0.004). In general, the majority of music genres showed notable beneficial impacts on many psychological aspects, which subsequently affected physical performance.

Table 5. Physical performance

	R^2	post-adjustmentR2
Attention	0.282	0.272
Emotion	0.260	0.251
Motivation	0.318	0.309
Physical Performance	0.275	0.270

The structural model assessment showed that the path coefficient t-value > 1.96, indicating significance, and the model fit metrics (SRMR, RMSEA < 0.08; CFI > 0.90) satisfied the acceptance criteria. Good explanatory and predictive ability was demonstrated by the model's R^2 value > 0.3 and Q^2 value > 0. These data unequivocally validate that various music genres substantially impact athletic performance and psychological well-being.

Findings

Various genres of music have a substantial impact on enhancing participants' enthusiasm for physical activity

The study demonstrates that music can regulate emotions, subsequently influencing individuals' motivation and conduct. Upbeat music enhances an individual's innate motivation by amplifying good emotions. The study's findings demonstrated that upbeat, high-tempo, motivational, rhythmic, and self-selected music notably enhanced participants' motivation to engage in physical activities. Karageorghis and Priest (2008) discovered that music can enhance the emotion and motivation of athletes, particularly music with lively rhythms and joyful tones, which can elevate positive emotion and motivation during physical exercises. According to the theories mentioned above and prior research, it is anticipated that upbeat, high-tempo, motivational, rhythmic, and self-selected music will significantly enhance participants' motivation in PA, leading to a notable positive effect. Table 6 shows that hypotheses H3a-H3e propose that upbeat, high-tempo, motivational, rhythmic, and self-selected music have a significant positive correlation with enhancing participants' motivation levels during physical exercise. Results confirm that they are strongly linked.

Various genres of music have notable impacts on enhancing participants' concentration during physical exertion

Studies indicate that music can improve concentration by modifying a person's emotional condition and heightening cognitive stimulation. Music can elicit happy emotions, which are thought to enhance cognitive functions, including attention and concentration. Furthermore, based on the psychological theory of music, music can impact an individual's mental arousal by employing its rhythmic and melodic characteristics, indirectly influencing their ability to concentrate and sustain attention. Rapid-paced and rhythmic characteristics of music may enhance athletic performance by improving positive emotions and reducing feelings of fatigue and exertion (Liu et al., 2021). Patania et al. (2020) found that rapid-paced music had a positive influence on exercisers' physiological responses. Their findings indicated that music with

rapid tempo significantly increased physiological arousal and performance levels during physical activity. This study highlights the significance of music tempo in enhancing the exercise experience by increasing emotion and motivation, which permits improved performance and endurance among participants. This includes enhanced attention, elevated arousal, and raised faster reaction speed. Thakare et al. (2017) found that motivational music can enhance an individual's mental state and facilitate better concentration and determination, especially during long periods of physical exertion. The music an individual selects for themselves has a substantial and advantageous impact on enhancing attention, regardless of the options available. Researchers found that allowing participants to choose their music improved their attention and performance more than the music provided for them (Clark et al., 2021; Jebabli et al., 2020). This is because it closely aligns with an individual's preferences and emotional condition. According to the theories mentioned above and prior research, it is anticipated that Upbeat, Motivational, Rhythmic, and Self-Selected Music will have a noteworthy and favourable influence on individuals engaging in physical activities, particularly enhancing their attention.

While High-Tempo Music may have particular benefits for specific individuals or situations, its impact on improving attention is often limited. Multiple studies support the claim that music may impact emotional states and perceived effort. For instance, Clark et al. (2021) and Terry et al. (2020) demonstrated that the speed and motivational aspects of music significantly influence athletes' performance by modifying their emotional states and perceived exertion levels. According to Terry et al. (2020) music featuring quality lyrics and an energising tempo can boost motivation and emotional states and reduce the perceived exertion when exercising. Williams et al. (2023) demonstrated that self-selected music enhances emotional states and motivation during exercise, resulting in improved performance and overall satisfaction with the exercise experience. These findings highlight the significant impact that music may play in regulating emotional reactions and enhancing the physical performance of those who engage in physical activities. A recent study Meng et al. (2020) has shown the impact of music on various elements of physical and cognitive function. Ouergui et al. (2023) demonstrated that fast-paced music enhances physiological responses during exercise, thereby improving motivation and performance. Furthermore, the impact of music on attention varies depending on the song and the listener's emotional condition. McFerran et al. (2022) investigated this by looking at how music impacts focus during daily work, indicating that rhythmic music may not constantly improve attention under some circumstances. The study demonstrated that specific genres of music can be disruptive, mainly when performing jobs that demand a significant amount of focus.

It has been proposed that the impact of music on attention is contingent upon the attributes of the music itself and the individual's current state of attention. Thus, hypotheses H4a, H4c, H4d, and H4e state that during PA, upbeat, high-tempo, motivational, and self-selected music have a substantial association with boosting participants' attention levels. As presented in Table 6, the presence of rhythmic music, as stated in H4d, did not significantly

improve participants' attention levels. This outcome may be attributed to the repetitive nature of rhythmic music, which might not sufficiently stimulate or sustain attention compared to other music genres. Additionally, individual differences in music preferences and task demands could influence the varying effects of music on attention. Research by Karageorghis et al. (2019) suggests that while rhythmic music enhances coordination and flow, its repetitive structure may limit its ability to engage cognitive processes like attention.

Various genres of music have a notable impact on enhancing the emotions of individuals when engaging in physical exercise

Various genres of music have a notable impact on enhancing the emotions of individuals when engaging in physical exercise. Studies indicate that music can positively influence individuals' emotional well-being by helping them manage and control their emotions (Karageorghis & Priest, 2012; Lane & Terry, 2000). It elicits diverse emotional responses through melodic, rhythmic, and harmonic elements, which affect an individual's emotional condition (Tong, 2024). It elicits diverse emotional responses by including various melodic, rhythmic, and harmonic elements, influencing an individual's emotional condition. According to the According to Attentional Focusing Theory (Eysenck et al., 2007) and Affective Response Theory (Mehrabian & Russell, 1974), music enables individuals to regulate their emotions by adapting or altering their present emotional state. Music exerts a favorable influence on emotional states by stimulating the brain's emotional centers and modulating an individual's emotional reactions. humans utilize music to regulate their emotions, intending to adapt or alter their present emotional state. Music has a favourable impact on emotional states by influencing the brain's emotional centres and modulating an individual's emotional reactions.

Furthermore, music can serve as a psychological intervention. According to the idea of psychological arousal, suitable music can manage an individual's level of psychological arousal and aid in attaining a desired emotional state. Dynamic music, motivating music, and music with a pronounced rhythm can significantly amplify the emotional condition of those involved in physical exercise. Lane and Terry (2000) discovered that including vibrant music can greatly enhance the emotional well-being of athletes and amplify the pleasure they derive from participating in PA. Biagini et al. (2012) shown that the utilization of motivational music improves an individual's emotional state and stimulates them to actively engage and get enjoyment from physical exercises. Karageorghis and Priest (2008) discovered that rhythmic music can enhance the emotional well-being of athletes by promoting positive emotions and diminishing negative emotions. The selection of music by individuals has a substantial influence on improving emotion during PA. A study conducted by Terry et al. (2020) demonstrated that an individual's selection of music can have a substantial impact on emotion enhancement, the promotion of happiness, and the facilitation of engagement when exercising. The result of the current investigation aligns with these prior studies.

Nevertheless, several studies (e.g., Karageorghis et al., 2010; Smith & Brown, 2015) has indicated that high-tempo music may not increase emotion

to the degree anticipated. As summarised in Table 6, the impact of high-speed music on emotion improvement was not statistically significant, possibly because the emotional response is highly sensitive to the music's tempo. Karageorghis et al. (2010) noted that while high-tempo music can enhance arousal, its effects on emotion may vary depending on individual preferences and task demands. Furthermore, listening to music while exercising may improve psychological factors (e.g., emotion, motivation) and psychophysiological (e.g., rate of perceived effort, arousal) alterations, allowing for more positive reactions throughout an exercise challenge. However, there is conflicting data about music's efficacy, which might be mediated by differences in music selection and preference (Ballmann, 2021). Karageorghis et al. (1999) discovered that fast-paced music boosted facial muscle activation and skin conductance, indicating a beneficial effect on general well-being. However, they found that high-tempo music did not significantly improve emotion more than melancholy music. According to the aforementioned theories and studies, hypotheses H5a, H5c, H5d, and H5e propose that Upbeat Music, Motivational Music, Rhythmic Music, and Self-Selected Music have a strong correlation with enhancing the participants' Attention level during physical activities. According to the aforementioned theories and studies, hypotheses H5a, H5c, H5d, and H5e propose that Upbeat Music, Motivational Music, Rhythmic Music, and Self-Selected Music have a strong correlation with enhancing participants' emotion levels during physical activities. However, H5b, concerning High-Tempo Music, lacks substantial evidence to support its impact on improving emotion levels. This outcome may be attributed to the complexity of emotional responses, which are often influenced by individual differences, such as personal preferences for tempo and the psychological state of participants prior to engaging with the music, as presented in Table 6.

Participant motivation has a substantial impact on the performance or results of physical activity

Music has the ability to impact athletes' performance by affecting their sense of rhythm, increasing their drive, and enhancing their psychological emotions. This is achieved through music's rhythmic, melodic, and harmonic parts. Psychophysiological theories suggest that music can impact both the physiological and psychological condition of an individual, hence influencing their athletic performance. According to research, different genres impact motivation, attention, and emotions. Jakupčević et al. (2021) discovered a favourable link between music absorption and emotion regulation, but a negative one with mindfulness. Rock music can improve emotion and motivation (Tripathy & Chaudhari, 2021). Genres impact cerebral hemodynamic responses, and deep learning algorithms can successfully categorise these effects. Musical emotions affect attentional performance, particularly arousal (Fernandez et al., 2021). Music indirectly improves athletic performance by influencing the physiological and psychological conditions of athletes. Synchronizing the pace of music with the rhythm of the sport can assist athletes in maintaining a consistent and efficient movement tempo, hence enhancing the overall efficiency of the sport.

According to the aforementioned theories and research, we anticipated that music has a substantial impact on enhancing the performance of those engaged in athletic activities. As presented in in Table 6, findings support H6 postulating that the motivation of individuals in group has a significant impact on their physical performance.

The performance or outcome of physical activity is significantly influenced by the attention of participants

According to affective response theory and music psychology, different genres of music can evoke varied emotional responses, altering an individual's mental and physiological state. The concept of rhythmicity posits that the tempo of music may synchronise with an individual's rate of movement, influencing movement efficiency and physiological response. Focusing one's attention is critical for improving workout performance. Vast et al. (2010) observed a high correlation between positive emotions like excitement and enjoyment and the capacity to maintain attention. This increased degree of attention helps to improve PA and overall sport performance. As a result of their different musical characteristics, numerous music genres influence an individual's emotional state, capacity to focus, and levels of physiological arousal, impacting physical performance and psychological well-being in various ways.

Emotions in sport can affect an athlete's performance by influencing their degree of arousal, focus of attention, and decision-making ability. According to current studies, athletes who successfully manage their emotions perform better under pressure (Lane & Terry, 2000). Kinanti et al. (2023) and Röglin et al. (2023) offered additional support for these findings, with Kinanti proving that fast-paced music improved attention and Röglin revealing that a high-intensity exergame entertained children. Musical emotions can influence attentional performance, namely the arousal component (Fernandez et al., 2021). According to Bishop et al. (2009), upbeat music significantly impacts attention during exercise, raising arousal, enhancing emotion, and promoting more engagement and pleasure.

According to the ideas and research outlined above, music is expected to significantly improve physical performance. Table 6 shows that the findings confirmed H7, affirming that participants' attention significantly influences their physical performance.

Participants' emotions significantly impact their physical activity performance or outcomes

According to affective response theory and music psychology, music may modulate and impact an individual's mental state and motor performance in certain circumstances or conditions. Emotions have a significant influence on one's physical performance. According to Kita (2012), emotional functions such as stress management, emotion regulation, and regulating sadness or anxiety influence athletic performance because they cause physical and functional changes in brain areas that are critical for emotional regulation. Furthermore, music influences participants' emotional reactions, psychological arousal, and physiological states during certain physical activities, improving physical performance and psychological experience. According to Bigliassi et al. (2019), music's rhythm and melodies stimulate the brain's emotional and

motor areas, resulting in increased emotion and physical performance. They observed that music activates brain systems related to emotional regulation and motor control, which can dramatically improve workout pleasure and efficiency. Music, particularly those with strong rhythmic features, can synchronise with an individual's movement, lowering perceived effort and enhancing endurance during physical exercise. This synchronisation and emotional connection explain why music is such an effective tool for improving exercise's psychological and physiological elements (Bigliassi et al., 2019).

Emotions in sport can affect an athlete's performance by influencing their degree of arousal, focus of attention, and decision-making ability. According to recent studies, athletes who can efficiently manage their emotions perform better in high-pressure circumstances. Furthermore, athletes who feel good emotions, such as excitement and joy, are more motivated and perform better than those who experience negative emotions, such as worry and fear (Woodman et al., 2009). Jakupčević et al. (2021) found a positive association between music absorption and emotion regulation, whereas a negative correlation was found for mindfulness. Rock music has been shown to boost emotion, provoke emotions, and motivate listeners (Tripathy & Chaudhari, 2021). Music genres may be efficiently classified based on their influence on cerebral hemodynamic responses, with deep-learning models performing well (Rahman et al., 2022). Musically-induced emotions can influence attentional performance, namely the arousal component (Fernandez et al., 2021). Emotional intelligence has a major influence on music learning performance, mediated by motivation. Background music can influence cognitive control, and musical arrangement judgements are significant (Yoo et al., 2022). Musicians control their emotions throughout practice to support their goal orientation, with others preferring a mixed emotional state (Breaden Madden & Jabusch, 2021).

According to the aforementioned views and studies, music is expected to improve the performance of those participating in physical activities significantly. The results confirm H8, demonstrating that participants' emotions significantly influence their physical performance. This finding aligns with the Proposed Theoretical Model, highlighting the critical role of emotional states in enhancing physical outcomes during activities.

Table 6. Hypothesis testing outcomes

Hypotheses	p	T	Establishment situation
H3a: Upbeat music has a significant effect toward improving participants' motivation during physical activities.	0.001	3.181	supported
H3b: High-tempo music has a significant effect toward improving participants' motivation during physical activities.	0.007	2.700	supported
H3c: Motivational music has a significant effect toward improving participants' motivation during physical activities.	0.001	3.190	supported
H3d: Rhythmic music has a significant effect toward improving participants' motivation during physical activities.	0.001	3.280	supported
H3e: Self-selected music has a significant effect toward improving participants' motivation during physical activities.	0.002	3.079	supported
H4a: Upbeat music has a significant effect toward improving participants' attention during physical activities.	0.003	2.925	supported
H4b: High-tempo music has a significant effect toward improving participants' attention during physical activities.	0.004	2.909	supported
H4c: Motivational music has a significant effect toward improving participants' attention during physical activities.	0.000	3.492	supported
H4d: Rhythmic music has a significant effect toward improving participants' attention during physical activities.	0.139	1.479	not supported
H4e: Self-selected music has a significant effect toward improving participants' attention during physical activities.	0.001	3.455	supported
H5a Upbeat music has a significant effect toward improving participants' emotion during physical activities.	0.001	3.363	supported
H5b: High-tempo music has a significant effect toward improving participants' emotion during physical activities.	0.308	1.021	not supported
H5c: Motivational music has a significant effect toward improving participants' emotion during physical activities.	0.005	2.820	supported
H5d: Rhythmic music has a significant effect toward improving participants' emotion during physical activities.	0.002	3.097	supported
H5e: Self-selected music has a significant effect toward improving participants' emotion during physical activities.	0.004	2.893	supported
H6: The motivation of the participant significantly influences the performance or outcome of the physical activity.	0.002	3.096	supported
H7: The attention of the participant significantly influences the performance or outcome of the physical activity.	0.000	3.955	supported
H8: The emotion of the participant significantly influences the performance or outcome of the physical activity.	0.000	5.606	supported

Conclusion

This study explored the effects of various music genres on physical exercise, focusing on changes in motivation, attention, and emotion and their impact on performance. Except for two hypotheses, sixteen were supported by the results of data analysis. Out of the 18 hypotheses tested, 16 were supported by the data analysis. These results confirm that vibrant, rhythmic, and motivational music significantly

enhances motivation and evokes positive emotions, contributing to improved physical performance. Self-selected music demonstrated the strongest effects, emphasising the importance of personal preference in achieving optimal outcomes. However, H4d, predicting the impact of rhythmic music on attention, and H5b, anticipating high-tempo music's influence on emotion, were not supported, indicating the nuanced and context-dependent nature of music's effects on psychological and physical factors.

Nonetheless, the study is limited by its cultural context and sample size, which may affect the generalizability of the results. Future research should involve more extensive and diverse samples to examine the impact of personalised music interventions on physical performance across different cultural settings. Despite the study's limitations, findings contribute to the ongoing discourse on the benefits of incorporating music into physical education and sport to enhance the overall experience and promote PA.

Statement of Research and Publication Ethics

This study, "The Effects of Incorporating Music in Physical Education on the Physical Performance of Students in Chinese Sports Universities," adheres to rigorous publishing ethics. These include informed consent, confidentiality, data integrity, transparency, non-bias, and compliance with ethical norms for proper attribution and plagiarism avoidance, as approved by the Institutional Ethics Committee (IEC) from UCSI University and the Institutional Review Board (IRB) of the Shandong Sport University on 20/08/2022.

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Message from the ISCPES President

Prof Dr Rosa López de D'Amico

It gives me great pleasure to announce that the 23rd Biennial Conference of the International Society for Comparative Physical Education and Sport (ISCPES) will take place in Auckland, New Zealand, from December 1st to 4th, 2025. The venue will be Auckland University of Technology (AUT). The primary sponsor is Thomas Education**,** with additional support from the Malaki Alatini Trust. The conference theme is ***Advancing Global Well-being through Physical Education and Sport***, and the subthemes are:

1. **Diversity and Inclusion in Physical Education and Sport:**
    - Promoting equity and accessibility for all
    - Addressing the needs of minority and marginalised groups
    - Overcoming barriers to participation
    - Celebrating diversity in physical activity and sport
2. **Physical Education Curriculum for the 21st Century:**
    - Integrating technology into physical education
    - Developing critical thinking and problem-solving skills through sport
    - Fostering lifelong physical activity habits
    - Adapting curricula to diverse learning styles and abilities
3. **Sport for Youth Development:**
    - The role of sport in character development and social skills
    - Using sport to promote mental health and well-being
    - Combating youth violence and crime through sport
    - Empowering young people through leadership opportunities in sport
4. **Indigenous Education:**
    - Incorporating Indigenous knowledge and culture into physical education and sport
    - Promoting Indigenous physical activities and games
    - Addressing the unique health and wellness needs of Indigenous communities
    - Empowering Indigenous youth through sport and recreation
5. **Physical Activity and Health:**
    - The impact of physical inactivity on global health
    - Promoting physical activity for chronic disease prevention and management
    - The role of physical education in addressing obesity and non-communicable diseases
    - The benefits of physical activity for cognitive function and academic performance
6. **Innovation in Physical Education and Sport:**
    - Emerging technologies in physical activity and sport
    - Innovative teaching and coaching methods
    - New approaches to sport development and management
    - The future of physical education and sport in a changing world
7. **Physical Literacy:**
    - Developing fundamental movement skills
    - Promoting physical literacy for lifelong health and well-being
    - Integrating physical literacy into physical education curricula
    - Assessing physical literacy levels and needs

Please check the conference website at www.iscpes2025.nz; additional information will be available soon. Mr. Fran Serrano is the chair of the LOC; for further information, you can contact him at the following email address: fran@thomas-education.co.nz.

I would also like to communicate that ISCPES has endorsed the conference 'Fit for Life: Empowering Youth through Physical Education, Sport and Traditional Sports' that will take place in Goa, India, on February 18th – 20th, 2025. It is jointly organised by the National Sports University, Ministry of Youth Affairs & Sports, Govt. of India, and Goa University, with a partner Institution, Don Bosco College, Goa. For more information, check the web page: www.icffl2025.com or contact Prof. Usha Nair (Vice-Chancellor) at vicechancellor.nsu.imphal@gmail.com.

Finally, I invite you to submit your papers to the International Sports Studies journal. Let's spread the word about the continuous work of volunteers who dedicate their efforts to providing a quality publication for scholars in physical education and sport.

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