

Robin Maurer

Matriculation Number: 20-060-828

Master of Science in Sport, Exercise and Health

Department of Sport, Exercise and Health

**Sport for Development Projects and their Impact on Soft Skills among
Youth in Low- and Middle-Income Countries:
A Systematic Review of Quantitative Evidence**

Master's Thesis

Submitted to the Department of Sport, Exercise, and Health

University of Basel

Supervisor: Dr. Ivan Müller



Basel, June 2026

Abstract

Background: Sport for Development (SFD) programmes are increasingly implemented in low- and middle-income countries (LMICs) to enhance youth employability through the development of soft skills. Despite growing policy support from organisations such as UNESCO and the IOC, the quantitative evidence underpinning this assumption remains limited and has not yet been comprehensively examined.

Methods: A systematic review was conducted in accordance with PRISMA 2020 guidelines using PubMed, Scopus, JFSD and Google Scholar. Studies were eligible if they employed quantitative or mixed-methods designs, were conducted in LMICs, included participants aged 13–24 years, and reported measurable soft skill outcomes. Methodological quality was assessed using the Mixed Methods Appraisal Tool (2018), and findings were synthesised narratively based on the established Soft Skill Categories (SSC).

Results: Twenty-one studies comprising approximately 6,500 participants from 14 countries met the inclusion criteria. Five of the seven SSC domains, namely self-management, teamwork, leadership, communication, and problem-solving, were assessed with moderate frequency, predominantly using the Life Skills Scale for Sport. Adaptability was measured inconsistently, while critical thinking was not assessed in any study. Twenty of the 21 studies reported positive associations between sport participation and soft skill development. However, the only large-scale randomised controlled trial (Beaman et al., 2021; n = 1,200; Liberia) found no statistically significant effects on any soft skill outcome, despite demonstrating positive labour market impacts.

Conclusions: Although the quantitative evidence is broadly consistent in suggesting beneficial effects, its overall methodological quality remains limited. The frequently assumed causal pathway linking SFD participation, soft skill development, and improved employment outcomes has not yet been empirically established. Across contexts, coaching quality and pedagogical intentionality emerged as the most influential factors associated with positive soft skill outcomes. As global investment in SFD continues to grow, strengthening the evidence for how and why these programmes work has become an urgent research priority.

Abstrakt

Hintergrund: In Ländern mit niedrigem und mittlerem Einkommen (LMICs) werden zunehmend „Sport for Development“-Programme (SFD) umgesetzt, um die Beschäftigungsfähigkeit junger Menschen durch die Entwicklung von Soft Skills zu verbessern. Trotz wachsender politischer Unterstützung durch Organisationen wie die UNESCO und das IOC ist die quantitative Evidenz, die diese Annahme untermauert, nach wie vor begrenzt und wurde bislang noch nicht umfassend untersucht.

Methoden: Es wurde eine systematische Übersicht gemäss den PRISMA-2020-Leitlinien unter Verwendung von PubMed, Scopus, JFSD und Google Scholar durchgeführt. Studien waren teilnahmeberechtigt, wenn sie quantitative oder gemischte Methoden verwendeten, in LMICs durchgeführt wurden, Teilnehmer im Alter von 13 bis 24 Jahren umfassten und messbare Ergebnisse zu Soft Skills berichteten. Die methodische Qualität wurde mithilfe des Mixed Methods Appraisal Tool (2018) bewertet, und die Ergebnisse wurden auf der Grundlage der etablierten Soft-Skill-Kategorien (SSC) narrativ zusammengefasst.

Ergebnisse: Einundzwanzig Studien mit insgesamt etwa 6.500 Teilnehmern aus 14 Ländern erfüllten die Einschlusskriterien. Fünf der sieben SSC-Domänen, nämlich Selbstmanagement, Teamarbeit, Führung, Kommunikation und Problemlösung, wurden regelmässig geprüft, wobei überwiegend die Life Skills Scale for Sport verwendet wurde. Anpassungsfähigkeit wurde uneinheitlich gemessen, während kritisches Denken in keiner Studie bewertet wurde. Zwanzig der 21 Studien berichteten über positive Zusammenhänge zwischen sportlicher Betätigung und der Entwicklung von Soft Skills. Die einzige gross angelegte randomisierte kontrollierte Studie (Beaman et al., 2021; n = 1.200; Liberia) ergab jedoch keine statistisch signifikanten Auswirkungen auf die Soft-Skills-Ergebnisse, obwohl positive Auswirkungen auf den Arbeitsmarkt nachgewiesen wurden.

Schlussfolgerungen: Die quantitative Evidenzbasis ist in ihrer Richtung konsistent, in ihrer Qualität jedoch fragil. Die angenommene Ursache-Wirkungs-Kette von SFD-Teilnahme über Soft-Skill Entwicklung zu Beschäftigungsergebnissen wurde empirisch nicht validiert. Über alle Kontexte hinweg erwiesen sich die Qualität des Coachings und die pädagogische Intention als die einflussreichsten Faktoren, die mit positiven Ergebnissen bei den Soft Skills assoziiert waren. Da die weltweiten Investitionen in SFD weiter zunehmen, sollten die Evidenz und die Erkenntnisse darüber, wie und warum diese Programme funktionieren, vertieft werden.

Résumé

Contexte: Les programmes de « sport au service du développement » (SFD) sont de plus en plus mis en œuvre dans les pays à revenu faible ou intermédiaire (PRFI) afin d'améliorer l'employabilité des jeunes grâce au développement de compétences non techniques. Malgré un soutien politique croissant de la part d'organisations telles que l'UNESCO et le CIO, les données quantitatives étayant cette hypothèse restent limitées et n'ont pas encore fait l'objet d'une analyse approfondie.

Méthodes: Une revue systématique a été menée conformément aux lignes directrices PRISMA 2020 à l'aide de PubMed, Scopus, JFSD et Google Scholar. Les études étaient éligibles si elles utilisaient des méthodologies quantitatives ou mixtes, étaient menées dans des PRFI, incluaient des participants âgés de 13 à 24 ans et rendaient compte de résultats mesurables en matière de compétences non techniques. La qualité méthodologique a été évaluée à l'aide de l'outil d'évaluation des méthodes mixtes (Mixed Methods Appraisal Tool, 2018), et les résultats ont été synthétisés de manière narrative sur la base des catégories de compétences non techniques (Soft Skill Categories, SSC) établies.

Résultats: Vingt-et-une études portant sur environ 6 500 participants issus de 14 pays répondaient aux critères d'inclusion. Cinq des sept domaines des compétences non techniques (SST), à savoir l'autogestion, le travail d'équipe, le leadership, la communication et la résolution de problèmes, ont été évalués avec une fréquence modérée, principalement à l'aide de l'échelle Life Skills Scale for Sport. La capacité d'adaptation a été mesurée de manière inégale, tandis que la pensée critique n'a été évaluée dans aucune étude. Vingt des 21 études ont rapporté des associations positives entre la pratique sportive et le développement des compétences non techniques. Cependant, le seul essai contrôlé randomisé à grande échelle (Beaman et al., 2021 ; n = 1 200 ; Libéria) n'a mis en évidence aucun effet statistiquement significatif sur les résultats relatifs aux compétences non techniques, bien qu'il ait démontré des impacts positifs sur le marché du travail.

Conclusions: Bien que les données quantitatives concordent globalement pour suggérer des effets bénéfiques, leur qualité méthodologique globale reste limitée. Le lien de causalité souvent supposé entre la participation à des programmes de développement des compétences non techniques (SFD), le développement de ces compétences et l'amélioration des résultats en matière d'emploi n'a pas encore été établi de manière empirique. Dans tous les contextes, la qualité de l'accompagnement et l'intention pédagogique sont apparues comme les facteurs les plus influents associés à des résultats positifs en matière de compétences non techniques. Alors que les investissements mondiaux dans les programmes SFD continuent de croître, il est devenu urgent de renforcer les données probantes expliquant comment et pourquoi ces programmes fonctionnent.

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List of Abbreviations

ADAPT	Adaptability and Flexibility (SSC category)
AAP	African Action Programme
BRS	Brief Resilience Scale
CAAS	Career Adaptability and Adaptability Scales
CAR	Coach-Athlete Relationship
CART-Q	Coach-Athlete Relationship Questionnaire
COMM	Communication Skills (SSC category)
CRIT	Critical Thinking (SSC category)
IOC	International Olympic Committee
JFSD	Journal of Sport for Development
LEAD	Leadership (SSC category)
LMIC	Low- and Middle-Income Country
LMICs	Low- and Middle-Income Countries
LSS	Leadership Scale for Sports
LSSS	Life Skills Scale for Sport
MMAT	Mixed Methods Appraisal Tool
NGO	Non-Governmental Organisation
PE	Physical Education
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
PROB	Problem-Solving (SSC category)
PYD	Positive Youth Development
RCT	Randomised Controlled Trial
SDG	Sustainable Development Goal
SDGs	Sustainable Development Goals
SDT	Self-Determination Theory
SELF	Self-Management and Responsibility (SSC category)
SEM	Structural Equation Modelling
SFD	Sport for Development
SSC	Soft Skill Categories
TEAM	Teamwork and Collaboration (SSC category)

TPSR	Teaching Personal and Social Responsibility
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization
YES-S	Youth Experience Survey for Sport

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1 INTRODUCTION

Today, sport is increasingly positioned as a strategic instrument for addressing broader social, educational, and economic challenges across diverse global contexts. “The notion that sport and physical ability can promote social good is not new” (Dubinsky, 2021). The concept of Sport for Development (SFD) embodies this shift, referring to the strategic use of sport, physical activity, and play to advance non-sport objectives such as education, health, social inclusion and employability (Dubinsky, 2021), a field that has grown substantially since the 1990s (Coalter, 2010). Global organizations such as the United Nations, UNESCO, and the International Olympic Committee (IOC) increasingly highlight sport’s connection to the Sustainable Development Goals (SDGs), predominantly those addressing health and well-being, quality education, gender equality, and decent work (Baena-Morales et al., 2021; Baena-Morales & Ferriz-Valero, 2025). Within this framework, SFD initiatives have gained relevance in low- and middle-income countries (LMICs), where sport-based interventions are employed to foster youth empowerment and social mobility (Welty Peachey et al., 2020). Schulenkorf et al. (2016) states that “the popularity of SFD stems from its ability to capture or ‘hook’ a large number of people ... and use the momentum in and around sport as a strategic vehicle to achieve non-sport development goals”.

According to Svensson & Woods (2017), SFD projects were operating in 121 countries with 944 identified organizations. Most were operating in Africa, Europe, North America, Asia and South America. Figure 1 provides a geographical heat map of SFD and Peace Organisations (SDP). The results showed Education (36.7%), Livelihoods (16.9%) and Health (16.5%) as the most common thematic areas corresponding to the Codebook of the *Journal of Sport for Development (JSFD)*. These are directly linked to the SDG’s “Good health and Well-Being” (3), “Quality Education” (4) and “Decent Work and Economic Growth (8)”. Most of these programs showed a multisport approach with football being the most common from 32 different activities (Svensson & Woods, 2017). With the broad range of SFD projects, this study set the focus on SDG 8, Decent Work and Economic Growth in LMICs. This focus was selected because the SDG 8 domain is most directly connected to the soft skill outcomes identified in the employment literature as central to youth labour market entry.

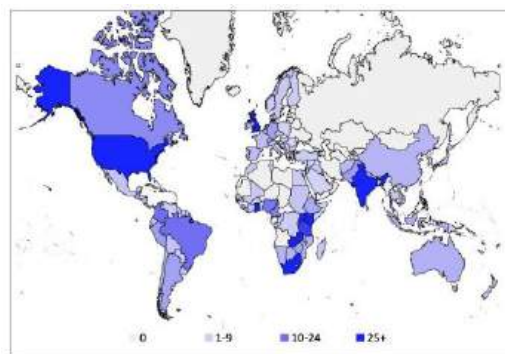


Figure 1: A Geographical Heat Map of SDP Organisations by Svensson & Woods (2017).

Research underscores the role of SFD projects in developing soft skills, such as teamwork, communication, leadership, and resilience, that are necessary for employability and active social participation (Guilbert et al., 2015). Soft skills, defined as non-technical interpersonal and self-regulatory competencies that are distinct from technical or task-specific hard skills, are more difficult to quantify but increasingly recognised as central to employability (Lamri & Lubart, 2023). The extent to which these programs effectively build such competencies remains insufficiently examined through quantitative evidence, limiting conclusions about their effectiveness, as research in the SFD field has been predominantly qualitative, with quantitative approaches being less commonly applied (Schulenkorf et al., 2016). This gap carries real consequences. International bodies including UNESCO, the IOC, and the UN are actively scaling SFD investments through frameworks such as Olympism365 and the Fit for Life programme (IOC, 2025; UNESCO, 2025). Without a quantitative evidence base, these investments risk being inefficient, and policymakers lack the tools to distinguish effective interventions from ineffective ones, particularly in LMIC contexts where resources are most constrained.

1.1 PROBLEM STATEMENT AND RESEARCH GAP

The growth of SFD as a field has been substantial and despite “the abundance of such activities, their tangible impacts have been a contested topic for debate among scholars” (Dubinsky, 2021). SFD has become an increasingly recognized approach for addressing social, educational, and economic challenges corresponding to the United Nations’ 2030 Agenda for Sustainable Development (DESA, 2025). Particularly in LMICs, SFD projects are used to foster empowerment, education, and employability among youth. Within this framework, soft skills have gained significant attention as essential competencies for personal and professional success. Employability research identifies communication, teamwork and collaboration, problem-solving, leadership, adaptability, critical thinking, and self-management as particularly relevant for labour-market participation and career development (Abdillah et al., 2023; Poláková et al., 2023; Rodríguez Martínez et al., 2021). Despite growing policy support and numerous project implementations, there remains limited quantitative evidence on the effectiveness of SFD initiatives in developing these soft skills (Schulenkorf et al., 2016). Most studies to date have focused on qualitative insights or single-case evaluations, leaving an evidence gap regarding measurable outcomes effects in LMIC contexts (Whitley, Massey, et al., 2019). According to Schulenkorf et al., (2016) there “have been no attempts to rigorously review and synthesize SFD research...” and this lack of systematic synthesis limits policymakers and practitioners ability to design and scale effective sport-based interventions aligned with the SDGs. So today, critics still argue that SFD “promises big but delivers little or nothing at all to the needy masses” (Mwaanga & Adeosun, 2020). While subsequent reviews have addressed related questions (Hermens et al., 2017; Whitley et al., 2019), no systematic synthesis of quantitative evidence on soft skill outcomes specifically in LMIC contexts had been undertaken at the time of this review. Thus, it is necessary to further investigate the current state of research. This also supports the broader goals of the UNESCO Chair network by generating knowledge that bridges academic research, policy, and practical implementation in international development contexts.

1.2 AIM AND RESEARCH QUESTIONS

The current state and effectiveness of SFD projects that foster soft skills among youth in LMIC’s needed to be assessed, and therefore this study was conducted. Youth is defined primarily as individuals aged 15–24 in line with the UN and UNESCO framework (UNESCO, 2023a; United Nations, 2024), with secondary school populations aged 13–14 additionally considered where interventions target life skills development through sport, as detailed in section 2.3. LMICs are classified according to the (World Bank, 2025) gross national income per capita thresholds. A systematic review methodology was selected, as existing reviews have focused predominantly on qualitative insights or single-case evaluations and none have synthesized quantitative evidence on soft skill outcomes in LMICs contexts specifically (Hermens et al., 2017; Whitley, Massey, et al., 2019). This systematic approach ensures transparency, replicability, and comprehensiveness in mapping the available evidence.

The central research question guiding this work is: *“What quantitative evidence exists on the effectiveness of Sport for Development projects in fostering employability-relevant soft skills among youth in low- and middle-income countries?”* To address this question, two sub-questions were formulated: *“Which employability-relevant soft skills are most frequently targeted and quantitatively measured in SFD interventions involving youth in LMICs?”* and *“Which types of SFD projects, such as school-based, NGO-led, or community sport programs report the most consistent positive outcomes on soft skills?”* The first sub-question aimed to move beyond the broad term soft skills toward a structured and analytically consistent classification, which the review achieves by applying the Soft Skill Categories (SSC) framework introduced in section 2.2.1 as its primary categorisation system for soft skill outcomes. The second sub-question aimed to structure findings and limitations in previous projects

and studies. Together, these questions provide a structured understanding of how different SFD initiatives contribute to developing transferable competencies among youth in diverse contexts.

1.3 STRUCTURE OF THE THESIS

This thesis is organised into six chapters. Following this introduction, Chapter 2 establishes the theoretical background, defining the key constructs of Sport for Development, soft skills, employability, the LMIC context, and presenting the conceptual framework that guides the review. Chapter 3 describes the systematic review methodology, including the search strategy, inclusion and exclusion criteria, screening process, data extraction, quality assessment, and narrative synthesis approach. Chapter 4 presents the results across five sections, covering study selection, study characteristics, quality assessment, soft skills targeted and measured, effects of SFD interventions, and a comparison of intervention types. Chapter 5 discusses the findings in relation to the research questions and the conceptual framework, with focused examination of four analytical threads: the evidence quality problem, the Beaman paradox and its implications for the soft skill-to-employment causal chain, the geographic skew toward Chinese PE studies, and the coaching mechanism as a determinant of soft skill outcomes. The chapter also addresses limitations of the review and draws out implications for practice, policy, and research. Chapter 6 presents the conclusion.

2 THEORETICAL BACKGROUND

2.1 SPORT FOR DEVELOPMENT

All members of the United Nations collaborate to advance the 2030 Agenda for Sustainable Development, addressing environmental, economic, and social dimensions of sustainability. Sport has demonstrated its capacity to contribute to many aspects of human development positively, including health, education, and livelihoods (Baena-Morales & Ferriz-Valero, 2025). There is substantial evidence that regular physical activity improves psychological well-being and mental health outcomes, particularly among young people, when practiced continuously (Biddle & Asare, 2011; Nakagawa et al., 2020). It is within this global agenda that SFD has emerged as a structured approach to harnessing sport's potential for social and human development.

The UN recognizes the potential of sport to promote development and peace through the empowerment of women and youth, the strengthening of communities, and the advancement of education, health, and social inclusion (DESA, 2025). This recognition builds on earlier international frameworks, such as UNESCO's declaration of 1978 that "the practice of physical education and sport is a fundamental right for all" (UNESCO, 2015). SFD describes sport-based interventions specifically constructed to contribute towards non-sport goals, such as the equality, youth development, social cohesion and education (Chong et al., 2022). Building on this recognition, SFD initiatives aim to deliberately harness sport's potential in structured interventions with explicit social and developmental objectives.

In addition to these established frameworks, recent years have seen an expansion of the institutional and conceptual foundations of SFD. The MINEPS VII Conference emphasizes digital transformation, gender equality, and climate action through sport (UNESCO, 2023b). UNESCO's Fit for Life programme introduced a data-driven approach to evaluate sport's role in education, well-being, and employability, while the IOC's Olympism365 strategy positioned sport as a key contributor to the SDGs through community-based partnerships and social innovation (IOC, 2025; UNESCO, 2025). Baena-Morales et al., (2021), drawing on analyses from the MINEPS, the Commonwealth Secretariat, and the Ibero-American Sports Council, identified direct connections between physical activity and eight of the 17 SDGs, as well as 19 of the 169 specific targets.

Within SFD, physical education (PE) can positively contribute to social development fostering key competencies such as cooperation, communication, empathy, and respect, particularly when programs are intentionally designed to promote these outcomes. However, these benefits are not automatic and depend heavily on the pedagogical approach and the social learning environment created by educators (Almeida et al., 2025; Opstoel et al., 2020). These outcomes are particularly relevant when programmes are intentionally designed to foster transferable competencies, making the quality of the pedagogical environment a central determinant of whether soft skills are developed.

A central mechanism through which sport environments foster soft skills is the quality of the coach-athlete relationship (CAR). Within SFD and physical education contexts, coaches play a two-sided role as both organizers of sport participation and architects of the developmental climate in which skills are acquired. Jowett & Ntoumanis (2004) conceptualise the CAR through three dimensions; Closeness, commitment, and complementarity. Research consistently demonstrates that a high-quality CAR predicts positive psychosocial outcomes among youth (Holt et al., 2017; Jowett, 2017). Especially autonomy-supportive coaching behaviour has been identified as a significant predictor of life skills development, as it satisfies basic psychological needs for autonomy, competence, and relatedness as described by Self-Determination Theory (Ryan & Deci, 2000; Vahdani et al., 2025). These findings are

relevant to the present review because the degree to which coaches create intentionally developmental environments, rather than simply managing sport participation, appears to be a key moderator of whether soft skill outcomes are achieved.

Alongside traditional SFD programs delivered by NGOs or community organisations, PE classes represent an increasingly documented setting for structured soft skill development. While PE is distinct from SFD in that it operates within formal schooling rather than as a targeted developmental intervention, structured PE models such as the Teaching Personal and Social Responsibility (TPSR) model (Hellison, 2011) and sport education approaches share the same intentional pedagogical logic that underpins SFD: sport participation is structured explicitly to produce transferable non-sport outcomes. Given that a number of quantitative studies on soft skill development in LMICs are set within PE contexts rather than traditional NGO-led SFD programmes, this review adopts an inclusive definition of SFD-aligned interventions that encompasses structured, pedagogically intentional sport programs regardless of whether they are delivered by NGOs, schools, or community organisations, provided that soft skill development is an explicit programme objective. Secondary school settings are particularly relevant in this regard. They represent the primary institutional context in which early adolescents aged 13–14 encounter structured, pedagogically intentional sport programmes, and this period of early adolescence constitutes a foundational stage for life skills (Holt et al., 2017). Including well-designed PE programmes within the review's scope therefore ensures that the most developmentally proximate evidence is captured. Within these pedagogically intentional frameworks, life skills can be developed through implicit or explicit processes. According to Holt et al., (2017) life skills can be developed through both implicit and explicit processes within sport. Implicit development occurs when participants are exposed to a positive sporting environment characterised by supportive relationships with coaches, peers, and other significant individuals. In contrast, explicit development involves the intentional teaching, discussion, and practice of life skills within sport programmes. Holt et al., (2017) further suggest that the effectiveness of life skills development is influenced by factors such as programme design, coaching practices, the social environment, and the opportunities provided for participants to apply and transfer these skills beyond the sporting context.

The following section examines how employability and soft skills are defined in the relevant literature and introduces the SSC framework that serves as the evaluative framework for this review. The SSC framework is derived from contemporary employability literature and provides a structured basis for classifying the soft skill outcomes reported in SFD interventions.

2.2 EMPLOYABILITY AND SOFT SKILLS

Among the thematic areas targeted by SFD initiatives, livelihoods and employability have gained relevance, especially in LMIC contexts, where youth face structural barriers to labour market entry (Burnett, 2023; Moustakas et al., 2022). Employability is a multidimensional construct that involves abilities, adaptability and seeks alignment with the expectations from the market and employer embedded within structural, organizational, educational, and personal conditions (Guilbert et al., 2015). Forrier and Sels (2003) said “that lifetime employability instead of lifetime employment is put forward as the new protection in the labour market”. Consequently, it is important to understand how these aspects can be fostered during youth.

Guilbert et al. (2015) describes three perspectives that overlap and interact in the aspect of employment: educational and governmental, organizational, and individual. The educational and governmental perspective emphasizes the role of public policy, education systems, and national strategies in shaping employability. The organizational perspective focuses on the relation between the employer and the influence on the maintenance of the employability of their workers. The third and last perspective looks at the attributes, behaviours, and strategies of an employee at the individual level that make someone employable. The third perspective is the most directly relevant to this review, because SFD interventions operate at the individual level through sport participation, and it is precisely the individual-level attributes identified in this perspective that the soft skills literature operationalises as the measurable outcomes of SFD programmes.

Van der Heijden et al. (2009) define employability through skills as “the continuous fulfilling, acquiring or creating of work through the optimal use of competences”. These competences can be seen as skills. Lamri and Lubart (2023) define skills as “an ability that is refined with training, technique, and experience. It is noted to involve a combination of cognitive and behavioural components which interact to allow the effective completion of a given task.” These skills are increasingly referred to as life skills. Life skills are often divided into hard skills and soft skills and are connected to abilities and competences that a person has. According to Lamri and Lubart (2023) the “distinction between hard and soft skills has long been a topic of debate in the field of psychology, with hard skills referring to technical or practical abilities, and soft skills relating to interpersonal capabilities.” Hard skills therefore describe specific actions that are needed to complete a task. These might vary and be differently defined depending on the line of work. Soft skills on the other hand are non-technical abilities, which are more difficult to grasp, measure and quantify (Lamri & Lubart, 2023). Soft skills are also referred to as “people skills” and describe the ability to “navigate effectively interpersonal situations, build and maintain relationships, and work well with others” (Lamri & Lubart, 2023). Drawing on contemporary employability literature, seven soft skill categories were identified as recurring competencies associated with labour market participation and career development. These categories are defined, operationalised, and individually grounded in following section, where they serve as the primary evaluative framework for the review.

2.2.1 Definitions of Assessed Soft Skills

To ensure conceptual clarity and enable consistent mapping of outcome measures onto the analytical framework, seven soft skill categories that recur across contemporary employability literature are presented and defined below. These categories are collectively referred to as the Soft Skill Categories (SSC) framework.

The foundation for this framework draws on three complementary sources, each of which contributes distinct justification for the categories. Rodríguez Martínez et al., (2021) conducted a five-year longitudinal qualitative study with 57 professional employment counsellors in Spain, identifying the soft skills most frequently mobilised in the orientation process and most strongly associated with

employability outcomes. Their findings prioritise communication, problem-solving, teamwork, and leadership as consistently high-ranking competencies across both the orientation process and the labour market. These four categories are therefore grounded in practitioner-validated evidence of what facilitates actual employment entry among individuals at risk of social exclusion.

Poláková et al. (2023) analysed skill requirements extracted from approximately 19,000 job postings across five years, examining employer demand for soft skills under the conditions of Industry 5.0 and increasing workplace automation. Their findings demonstrate that employers explicitly and consistently demand soft skills in job advertisements, with critical and analytical thinking, problem-solving, communication, and creativity with flexibility emerging as the most frequently required competencies. Crucially, Poláková et al. (2023) establish that adaptability and flexibility are not peripheral attributes but structural requirements of a workforce that must coexist with automation and manage conditions of continuous technological change. This provides the primary justification for the inclusion of Adaptability and Flexibility (ADAPT) and Critical Thinking (CRIT) as SSC categories.

Abdillah et al. (2023) provide the empirical foundation for the seventh category, Self-Management and Responsibility (SELF). Their quantitative study with 168 vocational high school students in Indonesia demonstrated that self-regulation, self-evaluation, and self-efficacy jointly and individually predict employability levels with high statistical significance, accounting for a substantial portion of variance in employment-relevant outcomes. The Indonesian vocational school context is methodologically relevant to the LMIC framing of this thesis: it involves youth in a middle-income country navigating a transition from structured education to labour market entry, which is precisely the population and transition this review targets. The finding that self-originating factors, rather than external credentials or technical skills alone, are critical predictors of employability provides direct justification for treating self-management and responsibility as an analytically distinct and empirically grounded SSC category.

Taken together, these three sources cover different methodological traditions and different geographic and institutional contexts, providing a more robust and multi-source foundation for the SSC framework. The seven categories are also consistent with the soft skill dimensions most commonly assessed by Villegas (2024) in the employability literature. It should nonetheless be acknowledged that the evidential basis is not uniform across all seven categories: while COMM, TEAM, PROB, LEAD, and SELF are supported by both practitioner-validated and predictive evidence, ADAPT and CRIT are grounded primarily in employer demand data from technologically advanced labour markets (Poláková et al., 2023). Furthermore, the applicability of this category set to the informal and structurally constrained labour markets most common in sub-Saharan Africa and Latin America is a theoretical assumption of the review rather than an empirically confirmed correspondence, and findings are interpreted with this limitation in view. The seven categories are defined and operationalised in the table below.

Soft Skill Category (SSC)	Operational Definition	Code
Communication Skills (Rodríguez Martínez et al., 2021)	The ability to convey and receive information clearly and effectively in interpersonal and group contexts.	COMM
Teamwork & Collaboration (Rodríguez Martínez et al., 2021)	The capacity to work constructively with others toward shared goals, including cooperation and collective accountability.	TEAM
Problem-Solving (Rodríguez Martínez et al., 2021)	The ability to identify challenges, generate solutions, and make effective decisions, including under uncertainty.	PROB
Leadership (Rodríguez Martínez et al., 2021)	The capacity to guide, motivate, and influence others, take initiative, and assume responsibility within group contexts.	LEAD
Adaptability & Flexibility (Poláková et al., 2023)	The ability to adjust to changing circumstances and manage adversity; in the sport literature commonly measured as resilience or career adaptability	ADAPT
Critical Thinking (Poláková et al., 2023)	The capacity to analyse, evaluate, and reflect on information in a reasoned and evidence-based manner.	CRIT
Self-Management & Responsibility (Abdillah et al., 2023)	The ability to regulate one's own behaviour, emotions, and goals, including self-efficacy, goal setting, and personal accountability.	SELF

Table 1: The Soft Skill Categories (SSC) framework: definitions, operationalisations, and codes (Maurer, 2026; based on Abdillah et al., 2023; Poláková et al., 2023; Rodríguez Martínez et al., 2021).

Within the sport science literature specifically, soft skills are commonly operationalised using the Life Skills Scale for Sport (LSSS), developed and validated by (Cronin & Allen, 2017). The LSSS comprises eight subscales; teamwork, goal setting, time management, emotional skills, interpersonal communication, social skills, leadership, and problem-solving and decision-making, and has been validated across multiple LMIC contexts including Brazil (Nascimento-Junior et al., 2020), Botswana and Ghana (Malete et al., 2022). The LSSS subscales do not map identically onto the SSC. Where studies employ the LSSS or other instruments, subscales are mapped onto the closest SSC: interpersonal communication and social skills → Communication Skills; teamwork → Teamwork and Collaboration; problem-solving and decision-making → Problem-Solving; leadership → Leadership; emotional skills and goal setting → Self-Management and Responsibility; time management → Self-Management and Responsibility. Where no clear mapping is possible, findings are reported descriptively. This reconciliation is made explicit to ensure transparency in the synthesis and to allow readers to evaluate the degree of construct alignment across included studies. The LSSS is embedded within the broader Positive Youth Development (PYD) framework, which conceptualises youth as resources to be developed rather than problems to be managed, and positions sport as an intentional environment for building the competencies that support healthy, productive transitions into adulthood (Holt et al., 2017; Vahdani et al., 2025). Lamri and Lubart (2023) additionally talk about the «soft skill revolution» and that the recognition of their values in the workplace has been growing. It is within this context of growing recognition that the present review examines whether SFD interventions in LMICs contribute measurably to the soft skills in the labour market, using the SSC framework as its evaluative framework and the LSSS as the most frequently encountered measurement instrument in the included literature.

2.3 YOUTH IN LOW- AND MIDDLE-INCOME COUNTRIES

This study adopts the (World Bank, 2025) classification for LMICs, which groups economies based on gross national income per capita. Low-income economies are classified as those with a gross national income per capita of 1,135\$ or less, while middle-income economies range from 1,136\$ to 4,465\$. These classifications are updated annually and are widely used in development research. The term LMICs therefore refers to countries with relatively limited financial and infrastructural resources, which often face challenges in the areas of youth development, education, and employability. These challenges are reflected in persistently high youth unemployment rates and a significant proportion of young people not in employment, education, or training (Cieslik et al., 2022; Geza et al., 2022; Maiga et al., 2020). In addition, labour markets in many LMICs are characterised by a high prevalence of informal employment, accounting for approximately 62% of total employment, which often limits access to stable income, social protection, and long-term career development (Enfield, 2021). At the same time, access to formal education and vocational training remains uneven, constraining opportunities for young people to acquire relevant skills for the labour market, despite ongoing efforts through programmes to improve employability outcomes (Tripney et al., 2013). In this context, these structural challenges are especially pronounced for young people, who are navigating the transition from education to employment within these constrained environments.

The United Nations (2024), UNESCO (2023) define youth as individuals aged between 15 and 24 years. This age range is widely applied across international development and SFD research. Although the UN definition of youth begins at 15, secondary school students aged 13–14 are included where studies are set in school-based or PE-based SFD-aligned programmes, as this period of early adolescence represents a foundational stage for life skills acquisition (Holt et al., 2017). Beyond age, youth can also be understood as a transitional life stage between dependency and full social and economic participation characterized by identity formation, education-to-work transitions, skill development and are “at the intersection of youth becoming, being and doing” (Wood, 2022). Therefore, youth is in

the middle of the transition from being a child and being an adult that is seeking employment, which is a critical part for many people. Developing soft skills can help this transition, and these aspects could be central to SFD initiatives in LMICs. The youth population spans both school-aged adolescents (approximately 13–18, including early secondary school students) and young adults in higher education or vocational training (approximately 19–24), and findings are interpreted with awareness that these sub-groups may differ in their developmental needs, institutional access to sport, and proximity to labour market entry.

2.4 STATE OF RESEARCH

The growing momentum behind SFD such as the UN SDGs, UNESCO's Fit for Life programme, and the IOC's Olympism³⁶⁵ strategy highlight sport's contribution to education, inclusion, and economic empowerment (Guilbert et al., 2015). However, policy recognition alone does not constitute an evidence base. This section examines the current state of empirical research on SFD and soft skill development, with particular attention to what existing reviews have and have not been able to establish. This thesis focuses specifically on the SFD and SDG 8 association, distinguishing it from Sport for Peace or Sport for Health and targets measurable soft skill outcomes among youth in LMIC contexts, an area where the evidence base remains underdeveloped.

2.4.1 Previous Reviews

Several systematic and scoping reviews have examined the contribution of sport and physical activity to youth development, providing a partial but incomplete picture of what SFD interventions can achieve. Following, previous reviews and their limitations will be summarised and listed.

Hermens et al. (2017) conducted a systematic review of life skill development through sport programs serving socially vulnerable youth, making it one of the most directly relevant reviews to the present study. Their review identified positive associations between sport participation and outcomes such as social competence, self-efficacy, and interpersonal skills. However, the review was predominantly qualitative in its synthesis and did not apply quantitative aggregation of outcome data. Furthermore, it did not restrict its scope to LMIC contexts, drawing heavily on studies from high-income countries, which limits the transferability of its conclusions to the populations and structural conditions most relevant to this thesis.

Whitley, Massey, et al. (2019) conducted a systematic review of sport-based youth development interventions in the United States, examining program characteristics and reported outcomes across a range of studies. While the review provided valuable insights into program design and implementation quality, its geographic restriction to the United States means it offers little direct evidence for LMIC contexts, where resource constraints, cultural factors, and labour market conditions differ substantially. Additionally, the review did not focus specifically on soft skills as a distinct outcome category, making it difficult to draw conclusions about which competencies are most effectively developed through sport-based programs.

Almeida et al., (2025) reviewed empirical research on positive youth development through sport and physical education among school-aged children and youth. Their review covered a broad range of developmental outcomes, including personal and social skills, and included studies using quantitative designs. However, the focus on physical education settings was predominantly in school contexts in higher-income countries and limits its applicability to community-based or NGO-led SFD programs operating in LMICs. The review also did not specifically examine employability-relevant soft skills as a targeted outcome.

Schulenkorf et al. (2016) conducted an integrated literature review of the SFD field, mapping thematic areas, geographic distribution, and methodological approaches across a large body of SFD research. Critically, they noted that quantitative approaches were underrepresented in the field and that no rigorous systematic synthesis of SFD outcomes had been undertaken at that point. While this review established a valuable overview of the field, it did not itself provide quantitative outcome data on soft skill development and explicitly called for more evidence-based research.

Taken together, these reviews share several limitations that create a clear justification for the present study. First, none have synthesised quantitative evidence specifically on soft skill outcomes within SFD programs in LMICs. Second, most reviews draw primarily on studies from high-income or Western contexts, reducing their applicability to the populations this thesis targets. Third, existing reviews tend to treat soft skills as one among many developmental outcomes rather than as a primary focus, meaning the specific competencies most relevant to employability are rarely isolated and examined systematically. Finally, follow-up data on whether observed skill gains are sustained over time is almost entirely absent across the reviewed literature, leaving questions of long-term effectiveness unanswered.

2.4.2 Evidence on SFD and Soft Skills

Empirical research on the relationship between structured sport participation and soft skill development suggests positive but context-dependent effects. Studies have found improvements in teamwork, communication, leadership, and self-efficacy following participation in structured sport-based programs, though the magnitude and consistency of these effects vary considerably across settings (Cronin & Allen, 2017; Whitley, Farrell, et al., 2019). Contextual factors including program duration, facilitator training, cultural fit, and the degree of intentional pedagogical design appear to moderate outcomes significantly, meaning that sport participation alone does not automatically produce soft skill development (Coalter, 2010; Schulenkorf et al., 2016).

Within LMIC contexts specifically, a small number of quantitative studies offer preliminary evidence of effectiveness. Malete et al. (2022) examined the effects of a sport-based positive youth development program on life skills and entrepreneurial mindsets across multiple African countries, finding significant improvements in several competencies including leadership and self-regulation. Moustakas et al. (2022) explored a sport-for-employability program in Morocco, finding promising indicators of skill transfer from sport to work contexts, though the study's small sample and qualitative orientation limit the strength of its conclusions. Burnett, (2023) similarly examined sport-for-employability as a practice in sub-Saharan Africa, identifying structural and programmatic factors associated with more effective outcomes, but again without providing aggregated quantitative effect data.

Across these studies, several methodological limitations emerged. Sample sizes are typically small, often involving a single program or site. Control or comparison groups are rarely used, making it difficult to attribute observed changes to the SFD intervention rather than to other concurrent influences. Measurement instruments vary widely, with few studies using validated scales for soft skill assessment, and self-report bias remains a consistent concern. Follow-up assessments beyond the immediate post-program period are rare, meaning the field cannot yet speak confidently to whether soft skill gains are sustained in the medium or long term. It is also notable that a significant portion of the available quantitative evidence comes from formal physical education settings, particularly in China, rather than from traditional NGO-led or community SFD programmes. While these studies share the same pedagogical intentionality that defines SFD-aligned interventions in this review, their institutional context, population characteristics, and structural conditions differ meaningfully from sub-Saharan African or Latin American SFD programmes, a distinction that is carried through the results in section 4.

These limitations collectively underscore the need for a systematic synthesis of available quantitative evidence. By collecting findings across studies, a systematic review can identify which soft skills show the most consistent evidence of development, which program types and contexts are associated with stronger outcomes, and where the most significant methodological gaps remain. This is precisely the contribution the present study aims to make.

2.5 CONCEPTUAL FRAMEWORK

This study is guided by a conceptual framework that links the key constructs of Sport for Development, soft skills, youth, employability, and the LMIC context into an analytical model. The framework draws on the theoretical foundations established in the previous sections and serves to structure the systematic review's search for evidence.

At the centre of the framework is the assumption that structured SFD interventions can serve as a vehicle for soft skill acquisition among youth. This assumption builds on the established understanding that sport participation alone does not automatically produce developmental outcomes; rather, it is the pedagogical design, facilitation quality, and programmatic intentionality that determine whether soft skills are effectively developed (Coalter, 2010; Schulenkorf et al., 2016). The framework therefore distinguishes between passive sport participation and structured SFD interventions with explicit non-sport objectives.

The logical chain underlying this framework proceeds as follows. SFD interventions operating within LMIC contexts provide structured participation opportunities for youth aged 13–24. Through this participation, and given adequate program design, youth can develop soft skills such as communication, teamwork, leadership, problem-solving, adaptability, critical thinking, and self-management, which have been identified as important for employability across contemporary employability literature and are represented within the SSC framework (Abdillah et al., 2023; Poláková et al., 2023; Rodríguez Martínez et al., 2021). This positions soft skill development as the mediating mechanism between SFD participation and broader livelihood outcomes, directly relevant to SDG 8 on Decent Work and Economic Growth. The quality of coaching and the intentionality of pedagogical design function as the operative mechanism within this chain: sport participation alone does not produce soft skill development, but structured facilitation, which is characterised by autonomy-supportive coaching, explicit life skills teaching, and a positive developmental climate, enables the translation of sport engagement into transferable competencies (Coalter, 2010; Cronin & Allen, 2017; Vahdani et al., 2025). While the full chain from SFD participation to labour market outcomes falls outside the scope of this review, the present study focuses on the intermediate step, whether SFD interventions measurably develop the employability-relevant soft skills represented within the SSC framework, while providing the evidence base necessary to evaluate the plausibility of the full chain. It must be noted that this third link in the chain is a theoretical assumption rather than an empirically confirmed relationship. No study in the quantitative LMIC SFD literature has yet validated the full sequence end-to-end, and the present review examines only the intermediate step while remaining alert to findings that may call the completeness of the chain into question.

The LMIC context functions not merely as a geographic boundary but as a substantive analytical dimension. Structural conditions including high youth unemployment, informal labour markets, and constrained access to formal education shape both the need for soft skill development and the conditions under which SFD interventions operate (Cieslik et al., 2022; Enfield, 2021). These conditions influence what outcomes are measurable, what program designs are realistic, and what transferability of findings across contexts is realistic.

This framework guides the systematic review at three levels. First, at the intervention level, the review examines what types of SFD programs (school-based, NGO-led, or community sport initiatives) are associated with soft skill outcomes. Second, at the outcome level, the review identifies which of the seven soft skill categories are most frequently targeted and show the most consistent quantitative evidence of development. Third, at the methodological level, the review assesses the quality and design of available evidence, identifying gaps that future research should address. Together, these three levels of analysis operationalise the framework and allow the research questions to be answered systematically.

3 METHODOLOGY

3.1 STUDY DESIGN (PRISMA 2020)

This study employs a systematic review design, conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses 2020 framework (PRISMA 2020), to answer the central research question: *What quantitative evidence exists on the effectiveness of Sport for Development projects in fostering employability-relevant soft skills among youth in low- and middle-income countries?* The review systematically identifies, screens, evaluates, and synthesises quantitative evidence to determine which soft skills are most frequently targeted and measured in SFD interventions, and whether different intervention types, such as school-based, NGO-led, or community sport programs are associated with more consistent positive outcomes. The focus is placed on the seven employability-relevant soft skill categories represented within the SSC framework, derived from contemporary employability literature as defined and operationalised in section 2.2.1 (Abdillah et al., 2023; Poláková et al., 2023; Rodríguez Martínez et al., 2021).

To assess the methodological quality of included studies, the Mixed Methods Appraisal Tool (MMAT, version 2018) was applied (Hong et al., 2018). The MMAT was selected because it provides design-specific appraisal criteria across five study categories; quantitative randomised controlled trials, quantitative non-randomised studies, quantitative descriptive studies, qualitative studies, and mixed-methods studies, making it suitable for systematic reviews that include methodologically heterogeneous evidence, as is the case in the present study. Each included study was appraised on five criteria appropriate to its design, with responses recorded as yes, no, or cannot tell. Studies were not excluded based on quality scores alone, but methodological weaknesses identified through the MMAT were documented in the extraction table and considered when interpreting the strength of evidence and drawing conclusions. The AXIS-Score (Downes et al., 2016) was considered as an alternative appraisal instrument. However, given the methodological heterogeneity of the anticipated evidence base, which spans RCTs, quasi-experimental designs, cross-sectional studies, and mixed-methods evaluations, the AXIS tool's primary orientation toward cross-sectional studies made it less appropriate than the MMAT for this review.

3.2 SEARCH STRATEGY

3.2.1 Inclusion and Exclusion Criteria

Studies were considered eligible for inclusion if they met all of the following criteria: the study examined a sport-based intervention implemented within an SFD context; the intervention was conducted in a LMIC as classified by the (World Bank, 2025); participants were primarily aged between 15 and 24 years, as defined by the UN and UNESCO youth framework (UNESCO, 2023; United Nations, 2024); studies targeting secondary school populations with a mean age of approximately 13–14 years were additionally considered eligible, given that secondary school represents a critical developmental period in which such competencies are commonly fostered (Holt et al., 2017). The study employed a quantitative or mixed-methods design with extractable quantitative results; and the study was published as a peer-reviewed journal article in between 2010 and 5.5.2026. This range was selected to capture the period of most substantial SFD growth and institutionalisation, matching with the establishment of the UN SDG framework and the acceleration of organised SFD research output documented by Schulenkorf et al. (2016), while ensuring comprehensive coverage of the most recent evidence available at the time of the search. In cases where mixed-methods studies contained a quantitative component with at least descriptive statistics and clear outcome data, these were

retained and the nature of the quantitative evidence was noted in the extraction table and considered in the quality assessment.

Studies were excluded if they focused solely on elite sport or competitive athletic performance without a developmental objective, measured only physical health or fitness outcomes without any soft skill data, were conducted exclusively in high-income countries, contained no quantitative outcome data, theses, or conference abstracts.

Inclusion Criteria	Exclusion Criteria
Population: Participants were primarily aged between 15 and 24 years, in line with the UN and UNESCO youth framework (UNESCO, 2023; United Nations, 2024). Studies involving secondary school populations with a mean age of approximately 13–14 years were additionally included when the intervention was school-based or PE-based and explicitly targeted life skills or soft skill development.	Population: Studies focusing exclusively on adult populations outside the defined youth range, or studies without a clear youth or adolescent target group.
Intervention: Studies examined a sport-based intervention implemented within a Sport for Development (SFD) context. Interventions included organised sport, physical education, or sport-based youth development programmes with an explicit developmental objective.	Intervention: Studies focusing solely on elite sport, talent development, or competitive athletic performance without a developmental or life skills objective.
Outcome: Studies reported at least one soft skill, life skill, psychosocial, interpersonal, or employability-related outcome (e.g., teamwork, leadership, communication, problem-solving, adaptability, self-management). Mixed-methods studies were included where quantitative soft skill data could be extracted.	Outcome: Studies measuring only physical health, fitness, or sport performance outcomes without reporting soft skill or life skill data.
Study Design: Quantitative and mixed-methods studies with extractable quantitative findings were included. Mixed-methods studies required at least descriptive quantitative results and clear outcome reporting.	Study Design: Purely qualitative studies, conceptual papers, commentaries, protocols, or studies without quantitative outcome data.
Publication Type: Peer-reviewed journal articles published.	Publication Type: non-peer-reviewed publications.
Date / Setting: Studies published between 2010 and 5 May 2026 and conducted in low- or middle-income countries according to the World Bank (2025) classification.	Date / Setting: Studies conducted exclusively in high-income countries or published outside the defined time range.

Table 2: Inclusion and exclusion criteria applied during the screening process (Maurer, 2026).

3.2.2 Search strings according to Databases

The literature search was conducted across four sources selected to ensure comprehensive coverage of the relevant academic literature. PubMed was selected to capture studies at the intersection of sport, health, and youth development. Scopus was chosen for its broad interdisciplinary reach and extensive indexing across social sciences, sport, and development studies. The JFSD was searched directly as a primary field-specific publication outlet for SFD research. Additionally, the first 100 results returned by Google Scholar were screened to capture grey literature and studies not indexed in the major databases. Web of Science and SPORTDiscus were considered but excluded due to extensive overlap with Scopus and PubMed respectively, confirmed through pilot searches on seed papers (Malete et al., 2022; Nyanyofio et al., 2024).

A structured keyword search was applied across all databases, combining terms from four conceptual categories: Sport for Development, soft skills, youth, and low- and middle-income countries. The keyword table is in the Appendix 8.1. Boolean operators AND and OR were used to combine terms across and within categories respectively, and truncation (*) was applied to capture spelling variations and related word forms. Search strings were individually tested and refined in each database to account for differences in indexing structures and controlled vocabulary. Seed papers were used as a quality check of each string. The Search strings are accessible in the appendix 8.2.

3.3 SCREENING PROCESS

All records retrieved from PubMed, Scopus, JFSD and Google Scholar were imported into Covidence, where duplicate entries were identified and removed before screening began. Following deduplication, a two-stage screening process was applied to assess eligibility against the inclusion and exclusion criteria outlined in section 3.2.1.

In the first stage, all records were screened at the title and abstract level. Records were excluded at this stage if they clearly did not meet the eligibility criteria based on the available information. In cases where the title and abstract did not provide sufficient information to make a clear decision, the record was retained for full-text review. In the second stage, the full text of all remaining records was reviewed in detail to confirm eligibility. Studies that did not meet all inclusion criteria upon full-text review were excluded, and the reason for exclusion was recorded.

Given that the screening process was conducted by a single reviewer, vague cases were resolved by returning systematically to the eligibility criteria. The complete identification, screening, and selection process is documented in the PRISMA 2020 flow diagram presented in Figure 2 (adapted from Page et al., 2021). As a single-reviewer process, this represents a methodological limitation of the present study; the implications for potential selection bias are acknowledged and discussed in section 5.4.

3.4 DATA EXTRACTION

A standardised data extraction table was developed prior to the search phase to ensure consistency in the collection of information across all included studies. The extraction table was piloted on two to three studies before full application to identify any ambiguities in the extraction categories and to refine the instrument accordingly. The extraction table is accessible in the appendix 8.3.

For each included study, the following information was systematically extracted: author(s) and publication year; country of implementation; study design; sample size; age range and gender distribution of participants; type of SFD intervention, categorised as school-based, NGO-led, or community sport program soft skills measured and the specific instruments or scales used to assess them, including their subsequent classification into the seven SSC categories; quantitative outcomes and effect sizes where reported; and MMAT results. Additionally, the presence or absence of a control or comparison group, the duration and frequency of the intervention, the validation status of measurement instruments, and the direction of reported effects (positive, mixed, or null) were extracted to support the quality assessment and narrative synthesis. This information forms the basis for both the narrative synthesis and the subgroup analyses described in section 3.6.

3.5 QUALITY ASSESSMENT

The methodological quality and risk of bias of all included studies were assessed using the MMAT version 2018, a critical appraisal instrument developed specifically for systematic reviews that include methodologically heterogeneous evidence (Hong et al., 2018). The MMAT was selected because it provides design-specific appraisal criteria across five study categories; 1. quantitative randomised controlled trials, 2. quantitative non-randomised studies, 3. quantitative descriptive studies, 4. qualitative studies and 5. mixed-methods studies, allowing meaningful quality assessment across the diverse range of designs represented in this review. Each included study was appraised on five criteria appropriate to its design, with responses recorded as yes, no, or cannot tell, with results reported at the criterion level to identify methodological strengths and weaknesses across studies. These criteria evaluate key aspects of study quality including 1. the appropriateness of the sampling strategy, 2. the representativeness of the study sample, 3. the validity and reliability of outcome measures, 4. the completeness of reporting, and 5. the potential for response or measurement bias.

Quality scores were documented for each included study and recorded in the data extraction table alongside study characteristics and key methodological weaknesses and the full MMAT table is accessible in the appendix 8.4. Studies were not excluded based on quality scores alone, but the quality of available evidence was considered when interpreting findings and drawing conclusions. Where patterns of methodological weakness were identified across studies, such as the consistent absence of

control or comparison groups, the reliance on unvalidated or custom self-report measures, and the near-universal absence of follow-up assessments beyond the immediate post-programme period, these are acknowledged as structural limitations of the available evidence base rather than grounds for exclusion, and are discussed in section 5.4.

3.6 DATA ANALYSIS / SYNTHESIS

The narrative synthesis was conducted following the framework proposed by Popay et al. (2006) which provides structured guidance for synthesising diverse quantitative evidence through textual description, tabular display, and thematic grouping rather than statistical aggregation. Vote counting, tallying the number of studies showing positive versus null results, was deliberately avoided, as this approach is sensitive to publication bias and does not account for differences in study quality or sample size (Popay et al., 2006).

Given the anticipated heterogeneity in study designs, participant populations, intervention types, and outcome measures across included studies, statistical meta-analysis was not considered appropriate for this review. A narrative synthesis approach was therefore adopted, which allows findings to be meaningfully compared and interpreted across studies without requiring statistical pooling of results. Summary tables presenting key study characteristics, intervention types, soft skills measured, and reported outcomes are used to structure the synthesis and support transparency in reporting.

Findings are organised and analysed across three dimensions corresponding to the two sub-questions guiding this review. First, outcomes are examined by soft skill category, using the seven employability-relevant soft skill categories represented within the SSC framework, to determine which skills show the most frequent and consistent evidence of development across SFD interventions. Second, findings are examined by intervention type, distinguishing between school-based, NGO-led, and community sport programs to assess whether certain program structures are associated with stronger or more consistent soft skill outcomes. Third, where data permits, findings are examined by geographic region to explore contextual variation across LMIC settings and identify whether patterns of effectiveness differ across sub-Saharan Africa, Asia, Latin America, or other regions represented in the literature.

Where included studies explicitly report alignment with the United Nations Sustainable Development Goals, this is documented and discussed in relation to SDG 8 on Decent Work and Economic Growth, connecting empirical findings to the broader policy framework established in the theoretical background of this thesis. Where the direction of effect is reported, a positive finding is defined as a statistically significant improvement ($p < 0.05$) in at least one soft skill outcome associated with SFD programme participation. Null findings and mixed results are reported with equal prominence to minimise the risk of positive publication bias distorting the synthesis conclusions.

4 RESULTS

4.1 STUDY SELECTION (PRISMA FLOW 2020)

The identification and screening process is documented in the PRISMA 2020 flow diagram presented in Figure 2, adapted from Page et al. (2021). A total of 2,466 records were identified across four databases: PubMed (n = 602), Scopus (n = 1,620), the Journal of Sport for Development (n = 144), and Google Scholar (n = 100). Following the removal of 392 duplicate records, 2,074 records were screened at the title and abstract level, of which 1,815 were excluded as clearly not meeting the eligibility criteria. The remaining 116 records were sought for full-text retrieval, of which two could not be retrieved and were therefore excluded. A total of 114 reports were assessed for full-text eligibility. Of these, 93 were excluded at this stage for the following reasons: no fitting SFD intervention (n = 34), absence of clear quantitative outcome data (n = 19), no specific focus on soft skills as a measured outcome (n = 16), study conducted exclusively in a high-income country (n = 16), and wrong age group (n = 8). The remaining 21 studies met all inclusion criteria and were carried forward into the review. 20 included studies are represented by a single report each, 1 study was reported twice (Freire et al., 2025a; Freire et al., 2025b).

PRISMA 2020 Flow Diagram

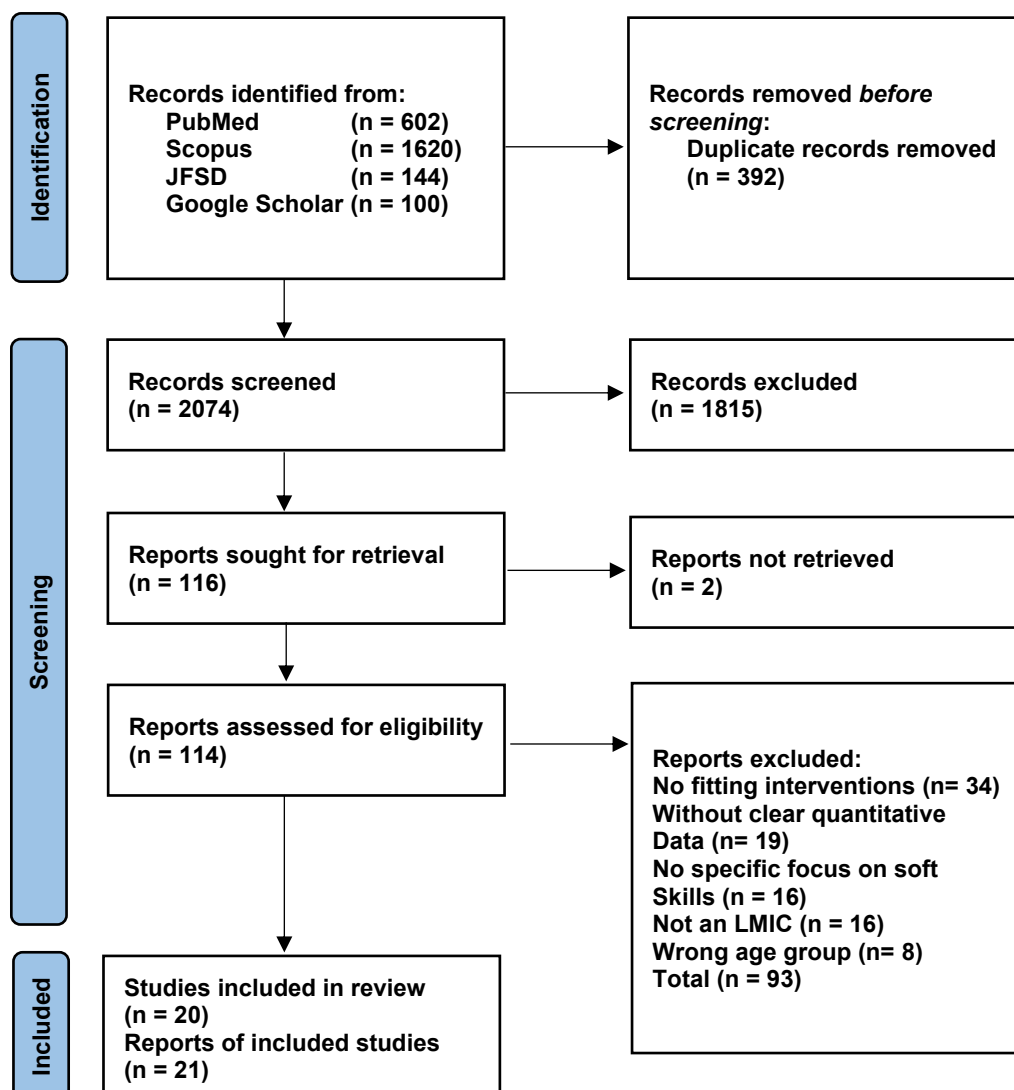


Figure 2: PRISMA 2020 flow diagram for the identification and screening of studies (adapted from Page et al., 2021).

4.1.1 Included Studies

Table 3 provides a structured overview of the 21 included studies across eight descriptive dimensions: author and year, country of implementation, study design, sample size, percentage of female participants, mean participant age, intervention type, and intervention duration. The table is intended to give an overview of the evidence base before the characteristics are described in detail in the sections that follow and summarize the most important aspects of the full extractions table.

Author / Year	Country	Study Design	n	% Female	Mean Age	Intervention Type	Duration
1. (Albuquerque et al., 2021)	Brazil	Cross-sectional correlational	541	17.9%	13.9 yrs	School-based after-school sport programme	1 year
2. (Bayyat et al., 2016)	Jordan	Cross-sectional survey	142	NR	18–24 yrs (est.)	University PE (swimming)	12 weeks
3. (Beaman et al., 2021)	Liberia	RCT	1,200	52%	21 yrs	NGO-led (Mercy Corps; football/handball)	6 months /16 Session 3 hours
4. (Burnett, 2022)	South Africa	Mixed-methods programme eval.	255	100%	~13–14 yrs	NGO-led (Let's Lead, Let's Coach)	Multi-year
5. (Chen et al., 2026)	China	Cross-sectional correlational (SEM)	390	31%	18.6 yrs	University PE (ultimate frisbee)	One semester
6. (Freire et al., 2024)	Brazil	Prospective longitudinal	78	0%	16.2 yrs	Sport club (handball)	1 year
7. (Freire et al., 2025a)	Brazil	Cross-sectional mediation	724	48%	14.6 yrs	Sport club (various)	Regular season
8. (Freire et al., 2025b)	Brazil	Cross-sectional mediation	724	48%	14.6 yrs	Sport club (various) — same sample as 2025a	Regular season
9. (Harun & Salamuddin, 2010)	Malaysia	Quasi-experimental pre-post + control	671	62.9%	18–24 yrs	School outdoor education programme	NR
10. (Liu et al., 2022)	China	Cross-sectional comparative	432	NR	19.8 yrs	University sport (soccer)	Regular participation
11. (Mandigo et al., 2018)	Guatemala	Mixed-methods programme eval.	116	31%	~13 yrs	NGO-led (Hoodlinks; community/various sports)	Multi-year
12. (Malete et al., 2022)	Botswana/ Ghana/ Tanzania	Quasi-experimental multinational	146	48.6%	15.9 yrs	NGO-led (AAP programme; 2 groups)	3 weeks
13. (Nyanyofio et al., 2024)	Ghana	Descriptive programme eval.	NR	Mixed	18–30 yrs	NGO-led (AAP programme; 5-year follow-up)	5-year follow-up
14. (Ocansey et al., 2023)	Ghana	Quasi-experimental pre-post + control	29	41%	14–22 yrs	NGO-led (sport/life skills/entrepreneurship camps)	2 × 3-day camps
15. (Ouaddou & Kanbaai, 2025)	Morocco	Cross-sectional survey	150	49%	14–20 yrs	School PE (handball)	12 sessions / 1 month
16. (Ricketts et al., 2025)	Botswana	Cross-sectional SEM	300	46.5%	17.2 yrs	School sport (various)	Regular season
17. (Vahdani et al., 2025)	Iran	Cross-sectional correlational	317	70%	22.3 yrs	University sport (various)	Regular participation
18. (Wang et al., 2024)	China	RCT (small)	70	NR	20.9 yrs	University PE (Tai Chi; PYD-based)	8 weeks
19. (Woodcock et al., 2012)	Kenya	Cross-sectional programme eval.	333	100%	14.3 yrs	NGO-led (Moving the Goalposts; football)	Membership-based
20. (Xia et al., 2025)	China	Quasi-experimental + control	81	59%	18–22 yrs (est.)	University PE (PBL volleyball)	12 weeks
21. (Xue et al., 2026)	China	Cross-sectional SEM	549	52.1%	15.2 yrs	School PE (motivational climate)	One semester

Table 3: Characteristics of all 21 included studies (Maurer, 2026).

NR = not reported. RCT = randomised controlled trial. PE = physical education. NGO = non-governmental organisation. SEM = structural equation modelling. PYD = positive youth development. PBL = problem-based learning

4.2 STUDY CHARACTERISTICS

The 21 included studies were published between 2010 and 2026 and collectively involved approximately 6,500 participants across 14 countries. Sample sizes ranged from $n = 29$ (Ocansey et al., 2023) to $n = 1,200$ (Beaman et al., 2021). Gender distribution was reported in most but not all studies. Where reported, it varied considerably: two studies involved exclusively female samples (Woodcock et al., 2012; Burnett, 2022), one was predominantly female (Vahdani et al., 2025: 70% female), while several were male dominated (Freire et al., 2024: 100% male; Albuquerque et al., 2021: 82% male; Chen et al., 2026: 69% male). Two studies did not report gender distribution (Liu et al., 2022; Wang et al., 2024). Participant age ranged from early secondary school students (mean age approximately 13 years in Mandigo et al., 2018, and Albuquerque et al., 2021) to young adults in university and vocational college settings (mean age 22.3 years in Vahdani et al., 2025). The majority of studies targeted participants within the 15–24 year range, consistent with the UN and UNESCO definition of youth adopted in this review.

The included studies originated from 14 countries across four broad regions. Sub-Saharan Africa was the most represented region, contributing eight studies across Liberia (Beaman et al., 2021), South Africa (Burnett, 2022), Kenya (Woodcock et al., 2012), Ghana (Ocansey et al., 2023; Nyanyofio et al., 2024), Botswana (Ricketts et al., 2025), and one multinational study spanning Botswana, Ghana, and Tanzania (Malete et al., 2022). Latin America contributed five studies: four from Brazil (Albuquerque et al., 2021; Freire et al., 2024; Freire et al., 2025a; Freire et al., 2025b) and one from Guatemala (Mandigo et al., 2018). The Middle East and North Africa region contributed two studies from Morocco (Ouaddou & Kanbaai, 2025) and Jordan (Bayyat et al., 2016). Southeast Asia contributed one study from Malaysia (Harun & Salamuddin, 2010) and Iran one further study (Vahdani et al., 2025). A substantial and unanticipated cluster of five studies originated from China, all within physical education or university sport contexts (Chen et al., 2026; Liu et al., 2022; Wang et al., 2024; Xia et al., 2025; Xue et al., 2026). These studies meet the pedagogical intentionality criterion for inclusion but differ meaningfully from traditional SFD programmes in their institutional context, population characteristics, and structural conditions. The implications of this geographic skew are discussed in section 5.2.3.

The evidence base was methodologically heterogeneous. Only two studies employed randomised controlled trial designs: Beaman et al. (2021), the only large-scale RCT in the sample ($n = 1,200$) and Wang et al. (2024), a small RCT ($n = 70$) focused on a Tai Chi-based career adaptability intervention. Four studies used quasi-experimental designs with a control or comparison group (Harun & Salamuddin, 2010; Malete et al., 2022; Ocansey et al., 2023; Xia et al., 2025), providing the next strongest level of causal inference. One study used a prospective longitudinal design without a control group (Freire et al., 2024), allowing within-person change to be tracked over one year. The remaining 14 studies were either cross-sectional correlational or descriptive designs (Albuquerque et al., 2021; Bayyat et al., 2016; Chen et al., 2026; Freire et al., 2025a; Freire et al., 2025b; Liu et al., 2022; Ouaddou & Kanbaai, 2025; Ricketts et al., 2025; Vahdani et al., 2025; Woodcock et al., 2012; Xue et al., 2026) or mixed-methods programme evaluations with an extractable quantitative component (Burnett, 2022; Mandigo et al., 2018; Nyanyofio et al., 2024). This distribution means that the large majority of included studies are capable of identifying associations between sport participation and soft skill outcomes but cannot establish causal effects. The two RCTs and four quasi-experimental studies represent the only designs capable of supporting stronger causal claims, and their findings are therefore weighted accordingly throughout the synthesis. Freire et al. (2025a) and Freire et al. (2025b) were based on overlapping participant samples but addressed different analytical questions and were therefore retained as separate studies.

Four broad intervention types were represented across the 21 studies. Seven studies examined NGO-led SFD programmes operating in community or non-formal settings (Beaman et al., 2021; Burnett, 2022; Malete et al., 2022; Mandigo et al., 2018; Nyanyofio et al., 2024; Ocansey et al., 2023; Woodcock et al., 2012). Five studies were set within school-based physical education contexts (Albuquerque et al., 2021; Harun & Salamuddin, 2010; Ouaddou & Kanbaai, 2025; Xia et al., 2025; Xue et al., 2026), with pedagogically intentional programme designs targeting transferable skills. Five studies were conducted in university or vocational college PE settings (Bayyat et al., 2016; Chen et al., 2026; Liu et al., 2022; Vahdani et al., 2025; Wang et al., 2024), and four studies examined the coach-athlete relationship as the primary mechanism for life skills development in sport club or school sport contexts (Freire et al., 2024; Freire et al., 2025a; Freire et al., 2025b; Ricketts et al., 2025). This last cluster constitutes a distinct evidence strand and is treated as such in sections 4.4 and 4.5.

Intervention duration varied substantially across the included studies, from a minimum of two three-day sport and entrepreneurship camps (Ocansey et al., 2023) to a five-year follow-up of a long-running NGO programme (Nyanyofio et al., 2024). Several studies reported single-semester or single-season programmes of approximately 8 to 16 weeks (Wang et al., 2024; Xia et al., 2025; Ouaddou & Kanbaai, 2025; Bayyat et al., 2016), while others were membership-based with no fixed duration (Woodcock et al., 2012) or described multi-year programme cycles without specifying exact exposure time (Burnett, 2022; Mandigo et al., 2018). The cross-sectional studies did not involve a time-limited intervention, but rather measured outcomes associated with ongoing sport participation (Freire et al., 2025a; Freire et al., 2025b; Liu et al., 2022; Ricketts et al., 2025; Vahdani et al., 2025; Xue et al., 2026; Chen et al., 2026). This variation in duration and format is a structural feature of the evidence base rather than a weakness of individual studies, though it does limit direct comparability of findings across studies. Sport type also varied widely, with football and handball being the most commonly featured activities (Beaman et al., 2021; Freire et al., 2024; Liu et al., 2022; Ouaddou & Kanbaai, 2025), alongside volleyball (Xia et al., 2025), swimming (Bayyat et al., 2016), Tai Chi (Wang et al., 2024), ultimate frisbee (Chen et al., 2026), and multi-sport or unspecified formats (Malete et al., 2022; Ricketts et al., 2025; Vahdani et al., 2025; Mandigo et al., 2018; Nyanyofio et al., 2024).

Considerable variation existed across the 21 studies in the instruments used to measure soft skill outcomes. The Life Skills Scale for Sport (LSSS; Cronin & Allen, 2017) was the most frequently used validated instrument, appearing as the primary measurement tool in eight studies (Freire et al., 2024; Freire et al., 2025a; Freire et al., 2025b; Malete et al., 2022; Ouaddou & Kanbaai, 2025; Ricketts et al., 2025; Vahdani et al., 2025; Xue et al., 2026). The LSSS comprises eight subscales; teamwork, goal setting, time management, emotional skills, interpersonal communication, social skills, leadership, and problem-solving and decision-making and has been validated across multiple LMIC contexts including Brazil (Nascimento-Junior et al., 2020), Botswana, and Ghana (Malete et al., 2022) making it the instrument with the widest cross-cultural validation across LMIC contexts in the sample. Its dominance across the included studies provides a degree of comparability within that cluster.

The Youth Experience Survey for Sport (YES-S) was used in two studies as a secondary or complementary instrument (Albuquerque et al., 2021; Ocansey et al., 2023), capturing broader positive youth development outcomes including personal and social skills. The General Entrepreneurial Tendency scale version 2 (GET v2) was used alongside the LSSS in Malete et al. (2022) to measure entrepreneurial mindset as a proxy for adaptability, and a comparable adapted instrument was used in the five-year follow-up study by Nyanyofio et al. (2024). The Career Adaptability and Adaptability Scales (CAAS; Savickas & Porfeli, 2012) appeared in one study only (Wang et al., 2024), making it the sole instrument in the review designed to measure the SSC category Adaptability & Flexibility in an explicitly employability-relevant and labour market-oriented way. The Coach-Athlete Relationship Questionnaire (CART-Q; Jowett & Ntoumanis, 2004) was used as a predictor rather than an outcome

measure in the coach-athlete relationship cluster (Freire et al., 2024; Freire et al., 2025a; Freire et al., 2025b), capturing the quality of the coaching relationship as a moderator of life skills development.

Beyond these established instruments, several studies relied on partially validated or custom-developed tools. Bayyat et al. (2016) used an author-developed Life Skills through Swimming Context Scale that was only partially validated for the Jordanian university context. Woodcock et al. (2012) employed a custom monitoring and evaluation toolkit developed by the Moving the Goalposts organisation, which was not independently validated. Burnett (2022) used the Brief Resilience Scale (BRS; Smith et al., 2008) alongside custom employability items, and Mandigo et al. (2018) combined a Life Skill Assessment Scale with an aggression and cooperation scale. Beaman et al. (2021) used a composite Psychosocial Index and several custom scenario-based indices for soft skill measurement that were not independently validated as standalone scales, which is a notable limitation given the study's otherwise high methodological rigour. This inconsistency between design quality and measurement quality in the Beaman study is discussed further in section 4.2.1. Across the full sample, approximately 13 studies used fully or predominantly validated instruments, five used partially validated tools, and three relied primarily on custom or unvalidated measures.

4.2.1 Risk of Bias / Quality Assessment

The methodological quality of all 21 included studies was assessed using the MMAT (version 2018; Hong et al., 2018). The full appraisal results are presented in Appendix 8.4. Overall, the evidence base was of moderate to moderate-high quality, with the majority of studies scoring three or above. Four studies achieved the highest score of 5/5: Malete et al. (2022), Ricketts et al. (2025), Mandigo et al. (2018), and Xia et al. (2025). Nine studies scored 4/5, reflecting generally sound methodology with at least one identifiable weakness, and six studies scored 3/5, indicating moderate quality with more than one notable methodological concern (see Appendix 8.4 for individual scores). One study scored 2/5, the lowest in the sample: Nyanyofio et al. (2024), whose descriptive programme evaluation design, unreported sample size, reliance on traceable alumni only, and absence of a comparison group collectively limit the conclusions that can be drawn from its findings. Burnett (2022) scored 3/5 but sits at the borderline of moderate and low quality given the qualitative dominance of its mixed-methods design and the limited extractable quantitative evidence.

First, the absence of control or comparison groups was the most prevalent weakness, affecting 13 of the 21 included studies, specifically the cross-sectional, correlational, and programme evaluation designs. Without a control or comparison group, observed changes in soft skill outcomes cannot be attributed to the SFD intervention rather than to maturation, concurrent influences, or regression to the mean. Second, reliance on unvalidated or partially validated self-report instruments was identified as a recurring concern, most notably in Bayyat et al. (2016), Woodcock et al. (2012), Burnett (2022), and Nyanyofio et al. (2024), but also partially in Beaman et al. (2021), whose composite psychosocial indices were not independently validated. Self-report measures introduce the risk of social desirability bias, particularly in programme evaluation contexts where participants may anticipate expected responses. This concern applies across the majority of the evidence base, not only to studies using unvalidated instruments. Third, the absence of follow-up assessment beyond the immediate post-programme period means the evidence base cannot speak to whether observed soft skill gains are sustained over time. Only Nyanyofio et al. (2024) conducted a long-term follow-up, though its low methodological quality (2/5) substantially limits the conclusions that can be drawn. It should be noted that Freire et al. (2024) used a prospective longitudinal design, tracking participants across one competitive season, which is methodologically stronger than a single cross-sectional snapshot but remains distinct from post-programme follow-up in the employability sense. A notable tension in the evidence base concerns the relationship between design quality and measurement quality within individual studies. Beaman et al. (2021) is the clearest example: the only fully randomised study in the

sample and the methodologically strongest overall, yet its soft skill measurement relied on composite indices and scenario-based instruments not independently validated as standalone scales. This inconsistency between design rigour and measurement quality is discussed further in section 5.2.2.

No studies were excluded on the basis of quality scores alone. Methodological weaknesses identified through the MMAT are documented in the extraction table in the appendix 8.3 and are considered consistently when interpreting the direction and strength of evidence throughout sections 4.3 to 4.5. The quality patterns described here are discussed as limitations of the review in section 5.4.

4.3 SOFT SKILLS TARGETED AND MEASURED

Figure 3 provides a visual overview of SSC measurement frequency across all 21 included studies, organised by study design. Table 4 provides more detailed measurement characteristics for each SSC category. Both are directly addressing sub-question one: Which employability-relevant soft skills are most frequently targeted and quantitatively measured in SFD interventions involving youth in LMICs? In Figure 3, each bar represents one SSC category, with segments indicating the contribution of Block A studies (RCT and controlled designs), Block B studies (longitudinal designs without control group), and Block C studies (cross-sectional and descriptive designs). Null outcomes within Block A and Block B are additionally distinguished, reflecting studies in which a given SSC was measured but no significant improvement was detected. The figure illustrates two structural features of the evidence base simultaneously: the relative frequency with which each SSC category was assessed, and the design of the studies producing those assessments. The complete absence of any bar for Critical Thinking reflects the substantive finding that this SSC category was entirely unmeasured across the full evidence base.

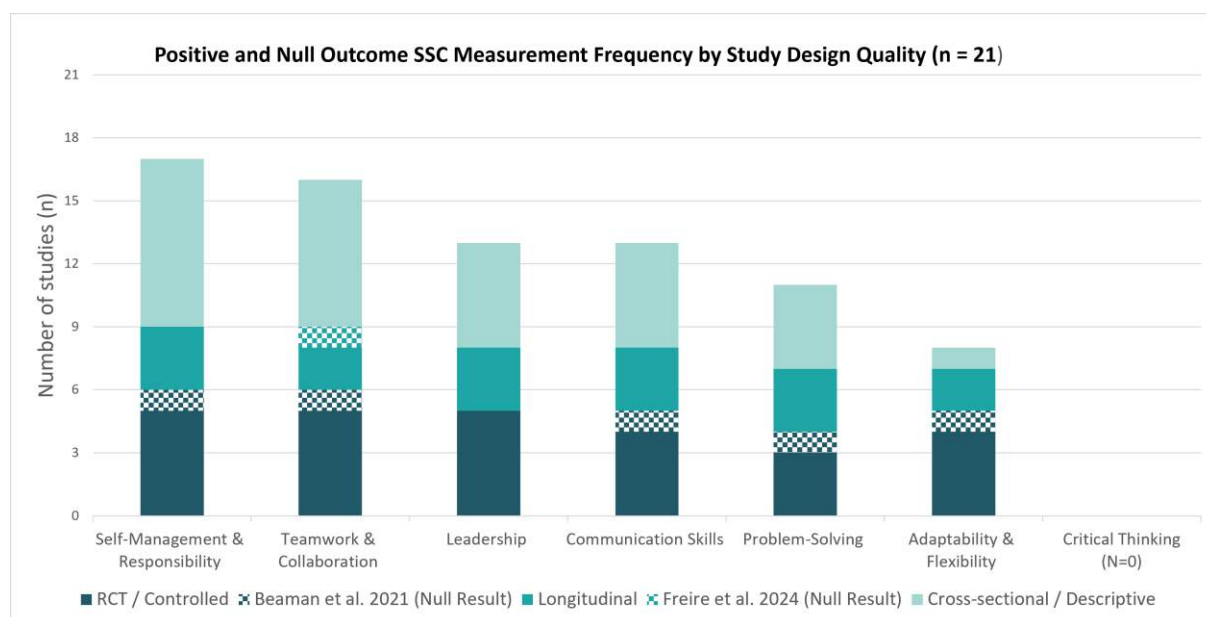


Figure 3: Positive and null outcome SSC measurement frequency by study design quality across 21 included studies (Maurer, 2026).

Block A = RCT and controlled designs; Block B = longitudinal or prospective designs without control group; Block C = cross-sectional and descriptive designs. Hatched segments within Block A and Block B indicate null outcomes for that SSC category. Studies could contribute to more than one SSC category; cumulative frequencies therefore exceed $n = 21$. No included study measured Critical Thinking (CRIT = 0).

More detailed measurement characteristics for each SSC such as Primary Instruments, Validation Status and Notes on Construct Mapping are presented in Table 4.

Soft Skill Category (SSC)	Code	Studies (n)	Primary Instruments	Validation Status	Notes on Construct Mapping
Self-Management & Responsibility	SELF	17	LSSS (goal setting + emotional skills subscales); Brief Resilience Scale; Rosenberg Self-Esteem Scale; custom items	Mostly validated (LSSS, BRS, RSE); partially validated in 3 studies	Most frequently measured skill. LSSS subscales map via goal setting and emotional regulation. Burnett uses BRS as proxy.
Teamwork & Collaboration	TEAM	16	LSSS (teamwork subscale); Team-Q (Liu); College Students' Teamwork Skills Scale (Xia); custom items	Mostly validated; Team-Q and Xia scale validated for their contexts	Second most frequent. Consistent measurement via LSSS across 8 studies. Freire 2024 found null result for TEAM despite positive total life skills.
Leadership	LEAD	13	LSSS (leadership subscale); Leadership Scale for Sports (LSS; Albuquerque); YES-S (Ocansey); custom items	Mostly validated; LSS is well-established	Woodcock reports leadership gains were primarily age-related rather than programme-driven. Burnett did not measure LEAD.
Communication Skills	COMM	13	LSSS (interpersonal communication + social skills subscales); custom swimming scale (Bayyat); Life Skill Assessment Scale (Mandigo)	Validated in LSSS studies; partially validated in Bayyat and Mandigo	Mapped primarily from LSSS interpersonal communication and social skills. Bayyat reports COMM as the most acquired skill.
Problem-Solving	PROB	11	LSSS (problem-solving and decision-making subscale); YES-S (Ocansey); custom items	Mostly validated	Mapped from LSSS problem-solving subscale.
Adaptability & Flexibility	ADAPT	8	Career Adaptability Scale (CAAS; Wang — only study using employability-specific measure); Brief Resilience Scale; entrepreneurial mindset scales (Malete, Ocansey, Nyanyofio); Five Cs scale (Ricketts)	CAAS validated; BRS validated; entrepreneurial mindset scales partially validated	Most heterogeneous measurement category. Wang (2024) is the only study operationalising ADAPT via a directly employability-relevant instrument (CAAS). Resilience used as proxy in 3 studies.
Critical Thinking	CRIT	0	—	—	Absent across all 21 included studies. No study measured critical thinking as represented within the SSC framework. This absence is a substantive finding: the field has not yet developed validated instruments for CRIT in SFD contexts.

Table 4: Frequency and measurement of employability-relevant soft skills across included studies, organised by SSC category (Maurer, 2026).

N = number of studies in which the skill was measured. CRIT = 0 across all 21 studies, representing a substantive finding of the review. LSSS = Life Skills Scale for Sport (Cronin & Allen, 2017). CAAS = Career Adaptability and Adaptability Scales (Savickas & Porfeli, 2012). BRS = Brief Resilience Scale (Smith et al., 2008). SSC = Soft Skill Categories.

Self-Management and Responsibility (SELF)

Self-management and responsibility was the most frequently measured category, appearing in 17 of the 21 included studies (Albuquerque et al., 2021; Bayyat et al., 2016; Beaman et al., 2021; Burnett, 2022; Freire et al., 2024; Freire et al., 2025a; Freire et al., 2025b; Harun & Salamuddin, 2010; Malete et al., 2022; Mandigo et al., 2018; Nyanyofio et al., 2024; Ocansey et al., 2023; Ricketts et al., 2025; Vahdani et al., 2025; Wang et al., 2024; Woodcock et al., 2012; Xue et al., 2026). It was measured primarily through the goal setting and emotional skills subscales of the LSSS, which map onto the SSC definition through their focus on behavioural self-regulation, goal-directed behaviour, and emotional control. Wang et al. (2024) additionally captured self-management via the Career Adaptability and Adaptability Scales. Beaman et al. (2021) used a composite Psychosocial Index and Rosenberg Self-Esteem Scale as proxies, and Burnett (2022) used the Brief Resilience Scale alongside custom

employability items. The construct mapping for SELF is generally consistent across studies, though different instruments capture different facets, such as emotional regulation, goal setting, self-efficacy, and resilience to varying degrees.

Teamwork and Collaboration (TEAM)

Teamwork and collaboration was the second most frequently measured category, appearing in 16 studies (Albuquerque et al., 2021; Bayyat et al., 2016; Beaman et al., 2021; Chen et al., 2026; Freire et al., 2024; Freire et al., 2025a; Freire et al., 2025b; Harun & Salamuddin, 2010; Liu et al., 2022; Malete et al., 2022; Mandigo et al., 2018; Nyanyofio et al., 2024; Ocansey et al., 2023; Ouaddou & Kanbaai, 2025; Ricketts et al., 2025; Xia et al., 2025). Measurement was most consistent for this category: the LSSS teamwork subscale served as the primary instrument in eight studies, with Liu et al. (2022) using the Team-Q instrument and Xia et al. (2025) the College Students' Teamwork Skills Scale, both validated for their respective Chinese contexts. The construct alignment between TEAM and the instruments capturing it is the strongest of all seven categories, as the LSSS teamwork subscale directly addresses cooperation, collective accountability, and constructive collaboration. Notably, Freire et al. (2024) reported a null result for the TEAM subscale despite significant improvements across seven other LSSS subscales in the same sample, a finding discussed further in section 4.4.

Leadership (LEAD)

Leadership was measured in 13 studies, primarily through the LSSS leadership subscale (Albuquerque et al., 2021; Freire et al., 2024; Freire et al., 2025a; Freire et al., 2025b; Harun & Salamuddin, 2010; Malete et al., 2022; Mandigo et al., 2018; Nyanyofio et al., 2024; Ocansey et al., 2023; Ricketts et al., 2025; Vahdani et al., 2025; Woodcock et al., 2012; Xue et al., 2026). Albuquerque et al. (2021) additionally used the Leadership Scale for Sports as a predictor variable rather than a soft skill outcome, a distinction noted for the mapping. Woodcock et al. (2012) reported that leadership gains were primarily associated with participant age rather than programme exposure duration.

Communication Skills (COMM)

Communication skills were measured in 13 studies (Bayyat et al., 2016; Beaman et al., 2021; Freire et al., 2024; Freire et al., 2025a; Freire et al., 2025b; Malete et al., 2022; Mandigo et al., 2018; Ouaddou & Kanbaai, 2025; Ricketts et al., 2025; Vahdani et al., 2025; Woodcock et al., 2012; Xia et al., 2025; Xue et al., 2026). Within the LSSS, communication was operationalised through the interpersonal communication and social skills subscales, both of which map reasonably onto the SSC definition of conveying and receiving information clearly in interpersonal and group contexts. Bayyat et al. (2016) used a custom Life Skills through Swimming Context Scale and reported communication and self-confidence as the most strongly acquired skills, though the partial validation of that instrument limits comparability with LSSS-based results. Ouaddou & Kanbaai (2025) reported a significant positive correlation between teamwork and communication scores ($r = 0.43$, $p < 0.01$) in a Moroccan secondary school PE context.

Problem-Solving (PROB)

Problem-solving was measured in 11 studies (Bayyat et al., 2016; Freire et al., 2024; Freire et al., 2025a; Freire et al., 2025b; Malete et al., 2022; Mandigo et al., 2018; Nyanyofio et al., 2024; Ricketts et al., 2025; Vahdani et al., 2025; Xue et al., 2026; Albuquerque et al., 2021). The LSSS problem-solving and decision-making subscale was the dominant instrument and maps directly onto the SSC definition.

Adaptability and Flexibility (ADAPT)

Adaptability and flexibility was the most heterogeneously measured of the seven categories, appearing in eight studies but operationalised through four distinct types of instruments across those studies (Beaman et al., 2021; Burnett, 2022; Chen et al., 2026; Harun & Salamuddin, 2010; Malete et al., 2022; Nyanyofio et al., 2024; Ocansey et al., 2023; Ricketts et al., 2025; Wang et al., 2024). Three studies used resilience as a proxy for adaptability, measured via the Brief Resilience Scale (Chen et al., 2026; Burnett, 2022) or similar items (Beaman et al., 2021). Three studies operationalised ADAPT through entrepreneurial mindset scales, capturing the capacity to respond to uncertainty and take initiative in novel contexts as a behavioural indicator of adaptability (Malete et al., 2022; Ocansey et al., 2023; Nyanyofio et al., 2024). Ricketts et al. (2025) captured adaptability partially through the Five Cs of positive youth development, specifically the competence and confidence dimensions. Wang et al. (2024) is the only study in the review to measure ADAPT using an instrument specifically designed for an employability context, the Career Adaptability and Adaptability Scales (CAAS), which assesses career concern, control, curiosity, and confidence as dimensions of readiness for labour market transitions. The heterogeneity of measurement across this category means that ADAPT findings cannot be directly compared across studies and must be interpreted with awareness of the construct each instrument is actually capturing.

Critical Thinking (CRIT)

Critical thinking was entirely absent as a measured outcome across all 21 included studies. No study operationalised, measured, or reported on critical thinking either as a primary outcome, a secondary outcome, or a subscale of a broader instrument. The LSSS has no subscale corresponding to critical thinking, and no included study supplemented it with an instrument covering this category. The implications of this absence are discussed in section 5.2.1 and 5.3.

Overall Coverage of the SSC Framework

Across the seven SSC categories, coverage was uneven. Five categories; SELF, TEAM, LEAD, COMM, and PROB were measured in between 11 and 17 studies each, predominantly through the LSSS or other validated instruments. ADAPT was measured in eight studies but with considerable instrument heterogeneity that limits cross-study comparability. CRIT was entirely unmeasured. The LSSS served as the primary instrument in approximately eight studies across multiple validated LMIC contexts, providing the strongest basis for cross-study comparison within the review. Custom or partially validated instruments were used in five to six studies, introducing additional uncertainty into the comparability of those findings.

4.4 EFFECTS OF SFD INTERVENTIONS

The overall pattern across the 21 studies is one of predominantly positive reported outcomes, with 20 of 21 studies reporting at least one significant positive association or improvement in a measured soft skill category. As the structure of Table 5 and Figure 3 make visible, the positive findings are concentrated in the weaker design categories: the large majority of studies reporting positive results are cross-sectional or descriptive, and their findings reflect associations between sport participation and soft skill levels rather than demonstrated effects of SFD interventions. The two studies with the strongest designs, which are both randomised controlled trials, tell a more complicated story, and it is with those studies that this section begins.

Author / Year	Study Design	Positive Outcomes (SSC Codes)	Null Outcomes	Key Statistic / Note
Block A: Studies with control or comparison group (strongest designs)				
Beaman et al. (2021)	RCT	None	SELF, TEAM, COMM, ADAPT	All soft skill outcomes $p > 0.05$; labour market effect $+0.12$ SD ($p < 0.05$)
Wang et al. (2024)	RCT (small)	ADAPT, SELF	None reported	$F = 18.4$, $p < 0.001$, $\eta^2 = 0.21$
Harun & Salamuddin (2010)	Quasi-exp.	TEAM, LEAD, ADAPT, SELF	None reported	$t = 24.71$ – 43.67 , $p < 0.05$; $R^2 = 34$ – 61%
Malete et al. (2022)	Quasi-exp.	COMM, TEAM, SELF, LEAD, PROB, ADAPT	None reported	ANOVA significant $p < 0.05$ across subscales
Ocansey et al. (2023)	Quasi-exp.	LEAD, PROB, SELF, ADAPT, TEAM	None reported	t-test $p < 0.05$; small sample $n = 29$
Xia et al. (2025)	Quasi-exp.	TEAM, COMM	None reported	$\beta = 0.44$, $p < 0.001$; mediation confirmed
Mandigo et al. (2018)	Mixed-methods	SELF, ADAPT, COMM, TEAM	None reported	$p < 0.05$ life skills + risk behaviour reduction
Block B: Longitudinal / prospective studies without control group				
Freire et al. (2024)	Prospective longitudinal	COMM, SELF, LEAD, PROB	TEAM	7/8 LSSS subscales $p < 0.05$; ES = 0.05–0.18 (small–large)
Nyanyofio et al. (2024)	Descriptive 5-yr follow-up	LEAD, SELF, ADAPT, PROB, TEAM	None reported	Sustained gains at 5-year follow-up (descriptive)
Woodcock et al. (2012)	Cross-sectional programme eval.	SELF, COMM, ADAPT, LEAD (age-related)	None reported	Membership duration β significant $p < 0.05$ (dose-response)
Block C: Cross-sectional and descriptive studies (associations only — not causal)				
Albuquerque et al. (2021)	Cross-sectional	TEAM, SELF, PROB	None reported	OR = 1.35, $p < 0.05$ (goal setting)
Bayyat et al. (2016)	Cross-sectional survey	COMM, TEAM, SELF, PROB	None reported	Correlation $p < 0.05$; unvalidated scale
Burnett (2022)	Mixed-methods eval.	SELF, ADAPT	None reported	Resilience scores increase across cohorts (descriptive)
Chen et al. (2026)	Cross-sectional SEM	TEAM, ADAPT	None reported	$\beta = 0.279$, $p < 0.05$; $R^2 = 46.4\%$
Freire et al. (2025a)	Cross-sectional mediation	COMM, TEAM, SELF, LEAD, PROB	None reported	Indirect $\beta = 0.22$, $p < 0.05$ (motivation mediates)
Freire et al. (2025b)	Cross-sectional mediation	COMM, TEAM, SELF, LEAD, PROB	None reported	Indirect $\beta = 0.19$, $p < 0.05$ (CAR mediates)
Liu et al. (2022)	Cross-sectional comparative	TEAM	None reported	$\beta = 0.31$, $p < 0.05$ (soccer participation - TEAM)
Ouaddou & Kanbaai (2025)	Cross-sectional survey	TEAM, COMM	None reported	$r = 0.43$, $p < 0.01$ (teamwork–social skills)
Ricketts et al. (2025)	Cross-sectional SEM	COMM, TEAM, SELF, LEAD, PROB, ADAPT	None reported	$\beta = 0.45$, $p < 0.001$ (autonomy support - LSSS)
Vahdani et al. (2025)	Cross-sectional correlational	COMM, TEAM, SELF, LEAD, PROB	None reported	β range 0.18–0.42, $p < 0.05$ (BPN → life skills)
Xue et al. (2026)	Cross-sectional SEM	COMM, TEAM, SELF, LEAD, PROB	None reported	$\beta = 0.51$, $p < 0.001$ (motivational climate)

Table 5: Direction of reported effects across all 21 included studies, organised by design quality (Maurer, 2026).

Block A = studies with control or comparison group (strongest designs). Block B = longitudinal or prospective studies without control group. Block C = cross-sectional and descriptive studies (associations only, not causal). SSC codes: SELF = Self-Management and Responsibility; TEAM = Teamwork and Collaboration; COMM = Communication Skills; LEAD = Leadership; PROB = Problem-Solving; ADAPT = Adaptability and Flexibility; CRIT = Critical Thinking. RCT = randomised controlled trial.

Null Findings: The Beaman Anchor

Beaman et al. (2021) is the only large-scale RCT in the review. Conducted in Liberia with 1,200 participants across a six-month NGO-led programme, the study found no statistically significant improvement in any measured soft skill outcome. Self-management proxies, teamwork indicators, communication-related measures, and adaptability measures all returned null results ($p > 0.05$ across all soft skill outcomes).

What makes the Beaman null result particularly striking is that it occurred alongside a significant positive labour market effect. Participants in the intervention group showed a significant increase in labour force participation of approximately 0.12 standard deviations ($p < 0.05$), with effects strongest among the most disadvantaged youth in the sample. The programme therefore appeared to improve employment-relevant outcomes without producing detectable changes in the SSC-related soft skill measures used to capture them. This disjunction of null soft skill results alongside a significant positive labour market effect are examined in section 5.2.

Positive Findings with Control or Comparison Groups

Among the five remaining studies in Block A that reported positive findings, the evidence is generally consistent and methodologically credible, though each carries specific limitations that qualify the strength of its conclusions. Wang et al. (2024) conducted a small RCT ($n = 70$) in a Chinese university setting, testing an eight-week Tai Chi intervention. The intervention group showed significant improvements in career adaptability (ADAPT) and self-management (SELF) relative to the control group ($F = 18.4$, $p < 0.001$, $\eta^2 = 0.21$). This is the only controlled study in the review to use the Career Adaptability and Adaptability Scales as an outcome measure.

Malete et al. (2022) examined a sport-based positive youth development programme across Botswana, Ghana, and Tanzania, comparing a life-skills-focused intervention group with a sport-only comparison group ($n = 146$, mean age 15.9 years). Significant improvements were found across five SSC; COMM, TEAM, SELF, LEAD, and PROB for both groups, with entrepreneurial mindset gains observed only in the intervention group (ANOVA, $p < 0.05$ across subscales). The three-week intervention duration and multinational design are noted constraints on interpretation.

Harun & Salamuddin (2010) evaluated a school-based outdoor education programme in Malaysia ($n = 671$), finding significant improvements in cooperation (TEAM), leadership ability (LEAD), self-confidence (SELF), and coping with change (ADAPT) relative to a control group, with the programme accounting for between 34% and 61% of variance in these outcomes across constructs ($t = 24.71$ to 43.67 , $p < 0.05$). While the study's partial instrument validation and limited description of intervention implementation are noted weaknesses, the effect magnitudes are among the largest reported in the review. Xia et al. (2025) found that a 12-week problem-based learning volleyball course in a Chinese vocational college significantly improved teamwork skills (TEAM) and communication (COMM) relative to a control group ($\beta = 0.44$, $p < 0.001$), with social interaction confirmed as a significant mediator of the effect. Mandigo et al. (2018) evaluated the Hoodlinks NGO-led programme in Guatemala City ($n = 116$), reporting significant improvements in self-management (SELF), adaptability (ADAPT), communication (COMM), and teamwork (TEAM), alongside reductions in risk behaviours and increases in peer cohesion ($p < 0.05$). These five controlled studies provide credible evidence that well-designed, pedagogically intentional programmes can produce measurable soft skill gains. However, their combined evidential weight does not override the null result from Beaman et al. (2021). Beaman remains the only large-scale RCT in the review and the positive findings from the remaining Block A studies qualify but do not supersede it.

Positive Findings Without Control Groups

The remaining positive findings in the evidence base come from longitudinal, cross-sectional, and descriptive studies without control groups and must be interpreted as evidence of association rather than causal effect. Among these, Freire et al. (2024) provides the strongest design, using a prospective longitudinal approach to track 78 male handball players in Brazil across one competitive season. Seven of the eight LSSS subscales showed statistically significant improvement over the season ($p < 0.05$), with effect sizes ranging from small to large ($ES = 0.05$ to 0.18 for individual subscales; $ES = 0.96$ for total life skills). The large total life skills effect size is notable, though the absence of a control group means that natural developmental maturation across the season cannot be ruled out as a contributing factor. The one null for teamwork is discussed in section 5.2.4.

Woodcock et al. (2012) reported a dose-response pattern in the Moving the Goalposts football programme in Kenya ($n = 333$, female only), finding that membership duration significantly predicted life skills gains across self-management (SELF), communication (COMM), and adaptability (ADAPT) domains via regression analysis (β significant, $p < 0.05$). The dose-response pattern provides indirect support for a cumulative programme effect, though the custom unvalidated measurement tool and absence of a control group limit the strength of this inference.

The remaining positive findings from Block C studies consistently report significant positive associations between sport participation or programme involvement and soft skill outcomes across various SSC, with effect sizes where reported ranging from small to moderate. Because all of these studies are cross-sectional or descriptive in design, they cannot establish causal effects; their findings reflect associations between sport participation and soft skill levels only and are interpreted accordingly in section 5.2.1. These associations are meaningful as signals of a relationship worth investigating further but do not constitute evidence of programme effectiveness in the causal sense most relevant to policy investment.

Mixed Findings

Several studies measured only two or three soft skill categories, meaning the scope of reported findings is limited to those categories only. Explicitly mixed findings, such as studies reporting significant positive results for some soft skill categories and null results for others within the same sample, were rare in the included literature. Freire et al. (2024) is the clearest example, reporting significant improvements across seven of eight LSSS subscales but a null result specifically for the TEAM subscale, a finding that is notable given that handball is inherently a team sport. This is discussed further in section 5.2.4. No other study in the review besides Freire et al. (2024) reported an explicitly mixed finding at the subscale level. Woodcock et al. (2012) reported that leadership gains were primarily associated with participant age rather than programme exposure duration, a distinction discussed in section 4.3, but this was framed as a qualification of the positive finding rather than a null result for LEAD.

The Coach-Athlete Relationship as a Distinct Evidence Strand

A consistent and theoretically important pattern emerges from the four studies examining the coach-athlete relationship (CAR) as a mechanism for soft skill development (Freire et al., 2024; Freire et al., 2025a; Freire et al., 2025b; Ricketts et al., 2025). These are accompanied by Vahdani et al., (2025) that is placed in the PE university group, but also looks at the CAR using the SDT. Across these studies, conducted in Brazil, Botswana, and Iran, coaching quality operationalised through autonomy supportive behaviour and CAR quality, consistently and significantly predicted life skills outcomes across multiple SSC including communication (COMM), teamwork (TEAM), self-management (SELF), leadership (LEAD), and problem-solving (PROB). In Ricketts et al. (2025), coach autonomy support

significantly predicted life skills acquisition among secondary school athletes in Botswana ($\beta = 0.45$, $p < 0.001$). In Vahdani et al. (2025), satisfaction of basic psychological needs, such as autonomy, competence, and relatedness significantly predicted all eight LSSS subscales among Iranian university sport participants (β range 0.18 to 0.42, $p < 0.05$). In Freire et al. (2025a) and Freire et al. (2025b), motivation and CAR quality respectively mediated the relationship between autonomy-supportive coaching and life skills development (indirect $\beta = 0.22$ and 0.19 , $p < 0.05$).

This evidence strand does not constitute traditional SFD programme evaluation: none of these studies tested a discrete intervention against a control condition, and the cross-sectional designs of four of the five studies mean that causal direction cannot be established. Nevertheless, the consistency of the coaching quality finding across three countries, four study designs, and multiple validated instruments is a robust pattern in the review. The implications of this pattern for programme design are discussed in section 5.2.4.

4.5 COMPARISON OF INTERVENTION TYPES

Table 6 summarises the four intervention type categories represented across the 21 included studies across six analytical dimensions: number of studies, regions and countries represented, SSC most frequently measured, overall direction of evidence, average MMAT quality score, and strength of employability framing and SDG 8 alignment. The table directly addresses sub-question two of this review: Which types of SFD projects report the most consistent positive outcomes on soft skills?

Intervention Type	n	Regions / Countries	Skills Most Measured (SSC Codes)	Direction of Evidence	Range MMAT	Employability Framing / SDG 8 Alignment
NGO-led SFD	7	Sub-Saharan Africa (Liberia, South Africa, Ghana ×2, Kenya, Botswana/Ghana/Tanzania); Latin America (Guatemala)	SELF, TEAM, LEAD, ADAPT, PROB, COMM (broad coverage); CRIT absent	Mixed: 1 RCT null (Beaman); positive in 5 quasi-exp. / eval. studies; Beaman is strongest design	Range 2–5/5	Strongest. Most studies explicitly frame outcomes as employability/livelihoods. Direct SDG 8 alignment in Beaman, Maletse, Ocansey, Nyanyofio, Burnett.
School-based PE	5	China (Xue, Xia); Morocco (Ouaddou); Malaysia (Harun); Brazil (Albuquerque)	TEAM, COMM, SELF, LEAD (moderate coverage); ADAPT mostly absent and CRIT absent	Positive across all 5 studies; strongest methodological quality of all four types	Range 3–5/5	Weak. Studies framed around PE development, social skills, or positive youth development not employment. Limited explicit SDG 8 connection.
University / College PE	5	China (Chen, Liu, Wang); Iran (Vahdani); Jordan (Bayyat)	TEAM, SELF, COMM, PROB, ADAPT (Wang only via CAAS); CRIT absent	Positive across all 5; all cross-sectional except Wang (small RCT); associations not effects	Range 3–4/5	Moderate. Wang (2024) is the only study measuring career adaptability directly (CAAS) strongest employability link in this cluster. Others frame around PYD or sport psychology.
Coach-Athlete / Sport Club	4	Brazil (Freire 2024, 2025a, 2025b); Botswana (Ricketts);	COMM, TEAM, SELF, LEAD, PROB (consistent across LSSS); ADAPT mostly absent and CRIT absent	Positive across all 4; Freire 2024 longitudinal (strongest in cluster); 2025a/b cross-sectional	Range 3–5/5	Weak–moderate. Framed around coaching quality and life skills development (PYD). Ricketts (Botswana) has closest LMIC/SFD framing. Not traditional SFD programmes.

Table 6: Comparison of four SFD intervention types across key analytical dimensions (Maurer, 2026).

SDG 8 = Sustainable Development Goal 8 (Decent Work and Economic Growth). MMAT = Mixed Methods Appraisal Tool (adapted from Hong et al., 2018). CAAS = Career Adaptability and Adaptability Scales (Savickas & Porfeli, 2012). SFD = Sport for Development. NGO = non-governmental organisation. PE = physical education. SSC = Soft Skill Categories. CRIT = Critical Thinking.

A structural observation must precede the type-by-type comparison. As noted in section 4.2, the geographic distribution of included studies maps directly onto intervention type in a way that

constrains interpretation. All studies from sub-Saharan Africa are either NGO-led SFD programmes or school sport studies. All studies from China are set within school PE or university sport contexts. Three of the four Brazilian studies fall within the coach-athlete sport club cluster (Freire et al., 2024; Freire et al., 2025a; Freire et al., 2025b), with Albuquerque et al. (2021) classified under school-based PE. This alignment means that differences in methodological quality, employability framing, and reported effect direction across intervention types cannot be cleanly separated from the contextual and structural conditions of the regions in which those types are concentrated.

NGO-led SFD Programmes

The seven NGO-led SFD studies (Beaman et al., 2021; Burnett, 2022; Malete et al., 2022; Mandigo et al., 2018; Nyanyofio et al., 2024; Ocansey et al., 2023; Woodcock et al., 2012) constitute the intervention type most directly aligned with the conceptual framework of this review. These studies are set in sub-Saharan Africa and Latin America LMIC contexts that motivated the review. They explicitly frame their outcomes in terms of employability, livelihoods, and social inclusion, and show the strongest direct alignment with SDG 8 on Decent Work and Economic Growth. Six of the seven studies report at least some positive soft skill outcomes, covering all six measurable SSC categories (CRIT being absent across the full evidence base) across the cluster. Malete et al. (2022) and Mandigo et al. (2018) provide the strongest positive evidence within this cluster, both achieving high MMAT scores (5/5) and reporting significant gains across multiple skill categories with comparison or mixed-methods designs. Woodcock et al. (2012) reports a dose-response relationship between programme exposure duration and life skills gains in Kenya, and Nyanyofio et al. (2024) provides the only five-year longitudinal follow-up in the review, suggesting that entrepreneurial mindset and self-management gains can be sustained over time among Ghanaian programme alumni, though the low methodological quality of that study (2/5) substantially limits the confidence that can be placed in this finding.

However, the NGO-led cluster is also the most methodologically mixed of the four intervention types, and this is where the Beaman null result assumes its greatest importance. Beaman et al. (2021) is not only the strongest study in this cluster but the strongest study in the entire review, and its finding of no significant improvement in any measured soft skill outcome despite a positive labour market effect is the most methodologically credible result in the evidence base. Its implications are discussed in section 5.2.2. The remaining studies Burnett (2022), Nyanyofio et al. (2024), and Ocansey et al. (2023) are characterised by small samples, short intervention durations, partially validated instruments, and absent control groups, meaning their positive findings, while consistent in direction, cannot be attributed with confidence to the interventions themselves. The policy relevance of this cluster and its alignment with SDG 8 are discussed in section 5.2

School-Based Physical Education

The five school PE studies (Albuquerque et al., 2021; Harun & Salamuddin, 2010; Ouaddou & Kanbaai, 2025; Xia et al., 2025; Xue et al., 2026) represent the methodologically strongest cluster on average, with MMAT scores ranging from 3/5 to 5/5. All five studies report positive associations or improvements in soft skill outcomes, and two include control or comparison groups (Harun & Salamuddin, 2010; Xia et al., 2025), providing a stronger basis for causal inference than most other studies in the review. Xia et al. (2025) in particular achieves both the highest MMAT score in this cluster (5/5) and a well-specified mediation model showing that a problem-based learning volleyball course significantly improved teamwork (TEAM) and communication (COMM) relative to a control group in a Chinese vocational college. Xue et al. (2026) provides the largest sample in this cluster ($n = 549$) and finds that an empowering motivational climate in secondary school PE significantly predicted life skills across five SSC via self-determination theory mechanisms ($\beta = 0.51$, $p < 0.001$, $R^2 = 0.43$).

None of the five school PE studies explicitly frames its outcomes in terms of livelihoods, labour market preparation, or SDG 8, which is relevant to how their findings are interpreted in the context of this review's central question, a point discussed in section 5.2.3.

University and College Physical Education

The five university and college PE studies (Bayyat et al., 2016; Chen et al., 2026; Liu et al., 2022; Vahdani et al., 2025; Wang et al., 2024) are characterised by methodologically moderate designs, with MMAT scores ranging from 3/5 to 4/5. All five report positive associations between sport participation and soft skill outcomes, though all except Wang et al. (2024) are cross-sectional in design and therefore limited to associational claims. Wang et al. (2024) is the only study in the review to use the Career Adaptability and Adaptability Scales, measuring adaptability in a directly employability-relevant form. Wang et al. (2024) reported significant improvements in career adaptability (ADAPT) and self-management (SELF) relative to the control group ($F = 18.4$, $p < 0.001$, $\eta^2 = 0.21$), making it the only study in this cluster to use a directly employability-relevant outcome measure.

The remaining four studies in this cluster; Chen et al. (2026), Liu et al. (2022), Vahdani et al. (2025), and Bayyat et al. (2016) provide cross-sectional evidence that university sport participation is associated with higher levels of teamwork, communication, self-management, leadership, and problem-solving across Chinese, Iranian, and Jordanian student populations. These findings are consistent in these student populations but are cross-sectional in design, limiting them to associational claims.

Coach-Athlete Sport Club Programmes

The four coach-athlete sport club studies (Freire et al., 2024; Freire et al., 2025a; Freire et al., 2025b; Ricketts et al., 2025) constitute a distinct evidence strand that cuts across the intervention type comparison in an analytically important way. Vahdani et al., (2025) partially also fits into this group and is integrated in the discussion but is primarily placed in the College PE studies. These studies are not primarily concerned with the type or structure of the SFD programme but rather with the relational and pedagogical mechanism through which any sport programme produces soft skill outcomes, specifically, the quality of the coach-athlete relationship and the degree of autonomy support provided by coaches. As established in section 4.4, coaching quality consistently and significantly predicts life skills outcomes across all four studies and across three national contexts (Brazil and Botswana). Freire et al. (2024) is the strongest study in this cluster by design, using a prospective longitudinal approach and reporting large total life skills effect sizes ($ES = 0.96$) over one competitive season, though the absence of a control group limits causal inference. The contribution of this cluster is to the mechanism question rather than the programme type question: it does not establish which intervention type is most effective, but the consistency of the coaching quality finding across countries and designs is discussed in section 5.2.4 in relation to its implications for programme design.

5 DISCUSSION

The quantitative evidence assembled in this review does not exist in isolation. The SFD field has generated a substantial qualitative literature documenting that structured sport environments can foster communication, teamwork, leadership, and resilience, particularly when facilitated by relationally engaged coaches operating within intentional developmental programmes (Coalter, 2010; Hermens et al., 2017; Holt et al., 2017). The findings of this review are directionally consistent with that qualitative consensus: across 20 of 21 included studies, structured sport participation was associated with higher levels of measured soft skills, and the coach-athlete relationship cluster independently quantified mechanisms that qualitative research has long described in process terms. However, the quantitative evidence also generates findings that the qualitative tradition cannot produce. The Beaman paradox raises questions about measurement sensitivity, alternative causal pathways, and the completeness of the SSC-to-employment chain that process evaluation is structurally unable to address. The complete absence of critical thinking measurement across all 21 quantitative studies is one of the most substantive findings this review produces, one that the field's qualitative tradition, focused on process rather than outcome measurement, is structurally unlikely to have surfaced.

5.1 SUMMARY OF KEY FINDINGS

This systematic review set out to examine what quantitative evidence exists on the effectiveness of Sport for Development projects in fostering employability-relevant soft skills among youth in low- and middle-income countries. The review identified 21 studies meeting the inclusion criteria, collectively involving approximately 6,500 participants across 14 countries. The findings are organised around the central research question and the two sub-questions that guided the review.

Central Research Question: What quantitative evidence exists on the effectiveness of SFD projects in fostering employability-relevant soft skills among youth in LMICs?

The quantitative evidence base on this question is larger than previous reviews have suggested but considerably weaker in methodological quality than the field's predominantly positive tone implies. Across the 21 included studies, 20 reported at least one significant positive association or improvement in a measured soft skill outcome following structured sport participation. On the surface, this represents a strong and consistent signal in favour of SFD effectiveness. However, this apparent consensus must be qualified immediately and substantially by the design quality of the studies producing it (Table 5). Majority of positive findings come from cross-sectional correlational studies and descriptive programme evaluations that cannot establish causal effects, only associations between sport participation and soft skill levels. When the analysis is restricted to the studies capable of supporting stronger causal claims, the two RCTs and the four quasi-experimental studies with control or comparison groups provide a more complicated and honest picture.

The single most important finding of this review is the null result from Beaman et al. (2021), the only large-scale RCT in the sample. This study found no statistically significant improvement in any measured soft skill outcome despite returning a significant positive labour market effect. This finding, which is the most methodologically robust in the review, directly challenges the assumption that structured SFD participation reliably produces measurable soft skill gains and cannot be dismissed or minimised in any honest synthesis of the available evidence. Among the remaining controlled studies, five reported positive findings across multiple soft skill categories, providing credible if qualified evidence that structured SFD-aligned interventions can produce measurable soft skill gains under the right conditions. The overall conclusion in response to the central research question must therefore

be stated plainly: the quantitative evidence base shows consistent associations between SFD participation and soft skill outcomes across 20 of 21 included studies, but those 20 studies are dominated by cross-sectional and descriptive designs incapable of establishing causal effects. The single study capable of providing the strongest causal evidence found no significant improvement in any measured soft skill outcome. The conditions under which positive effects can be reliably produced therefore remain insufficiently understood, and the predominantly positive tone of the available literature should not be mistaken for a confirmed evidence base.

Sub-question 1: Which employability-relevant soft skills are most frequently targeted and quantitatively measured in SFD interventions involving youth in LMICs?

The seven SSC categories were captured to substantially different degrees across the 21 included studies, as is depicted in Figure 3. Self-management and responsibility (SELF) was the most frequently measured category, appearing in approximately 17 studies (see Figure 3), followed by teamwork and collaboration (TEAM) in 16 studies, leadership (LEAD) in 13 studies, communication skills (COMM) in 13 studies, and problem-solving (PROB) in 11 studies. These five categories constitute the empirical core of SFD soft skill measurement and are captured predominantly through the Life Skills Scale for Sport, which served as the primary instrument in approximately eight studies and was validated across multiple LMIC contexts and languages. Adaptability and flexibility (ADAPT) was measured in approximately eight studies but with considerable heterogeneity in how the construct was operationalised, ranging from resilience proxies to entrepreneurial mindset scales to the Career Adaptability and Adaptability Scales, limiting cross-study comparability within this category.

The most significant finding in response to sub-question one, however, is an absence rather than a presence. Critical thinking (CRIT) was entirely unmeasured across all 21 included studies, as reflected by the empty bar in Figure 3. No study operationalised, assessed, or reported on critical thinking as defined by SSC framework, either as a primary outcome, a secondary outcome, or a subscale of a broader instrument. This is a substantive finding about the state of the SFD measurement field: the most cognitively complex of the seven employability-relevant SSC in the literature has no validated measurement instrument in use within quantitative SFD research in LMICs. The field has therefore converged on a narrow and largely interpersonal set of measurable skills that covers five of the seven categories in the SSC framework reasonably well but leaves its most analytically demanding dimension entirely unaddressed. The dominance of the LSSS as a measurement instrument is both a strength, by providing comparability across studies and a structural constraint, since its subscale architecture determines what the field can and cannot see.

Sub-question 2: Which types of SFD projects report the most consistent positive outcomes on soft skills?

Four intervention types were represented across the 21 included studies: NGO-led SFD programmes, school-based physical education, university and college PE, and coach-athlete sport club programmes (Table 6). The answer to sub-question two depends on whether consistency is defined in terms of employability relevance or methodological quality, and the two definitions point in different directions.

NGO-led SFD programmes showed the strongest alignment with the employability and livelihoods framing of this review, but the most heterogeneous methodological quality. The cluster is anchored by the Beaman null result, which carries more evidential weight than the positive findings from weaker designs within the same cluster. School-based PE studies showed the most consistent positive findings and the strongest average methodological quality, with all five reporting significant outcomes and two including control groups. However, none explicitly frames outcomes in employability or SDG 8 terms,

and four of five originate from Chinese institutional contexts. University and college PE studies showed consistent positive associations but were predominantly cross-sectional, with Wang et al. (2024) standing apart as the only study in the review to use a directly employability-relevant outcome measure. The coach-athlete cluster contributed the most consistently replicated mechanistic finding: across four studies in Brazil and Botswana, coaching quality and autonomy-supportive behaviour significantly predicted soft skill outcomes regardless of sport type or context. This is not a finding about which programme type works best, but it is the most practically actionable finding of the review.

A pattern that cuts across all findings is the near-universal absence of follow-up assessment. With the exception of Nyanyofio et al. (2024), whose five-year follow-up is methodologically limited, no included study assessed whether observed soft skill gains were sustained over time. The review can therefore speak to whether SFD interventions are associated with soft skill development at the point of measurement, but not to whether those gains persist or translate into labour market outcomes.

5.2 INTERPRETATION OF RESULTS

The findings summarised in section 5.1 raise four analytical questions that require closer examination than a descriptive summary can provide. The first concerns the relationship between the predominantly positive reported findings and the methodological quality of the studies producing them, and what this means for how confident the field can be about SFD effectiveness. The second concerns the Beaman paradox, the coexistence of a null soft skill result and a positive labour market effect in the only RCT in the review and what this reveals about the relationship between measured soft skills and actual employability outcomes. The third concerns the geographic skew toward Chinese PE studies in the evidence base and whether findings from that context can be meaningfully synthesised with findings from African NGO-led SFD programmes. The fourth concerns the consistent finding that coaching quality moderates soft skill outcomes across contexts and what this implies for how SFD programmes should be designed and evaluated. Each of these threads is examined in turn.

5.2.1 The Evidence Quality Problem

The most immediate interpretive challenge is the tension between the apparent strength of the signal from 20 of 21 studies reporting positive findings and the weakness of the designs producing it. This tension is not incidental. It reflects a structural feature of the SFD research field that has been noted by previous reviewers (Schulenkorf et al., 2016; Hermens et al., 2017) and that this review's quantitative synthesis makes visible in a particularly direct way. Understanding what the predominantly positive findings actually mean requires holding three observations simultaneously.

The first observation is that design quality and reported effect direction are inversely related across the evidence base. When studies are organised by design strength, as is visible in Figure 3, the bars are dominated by Block C segments, while the Block A segments for these same categories include null outcomes from the Beaman RCT and the Freire (2024) teamwork subscale. Table 5 presents the methodologically weakest studies, which are cross-sectional surveys and descriptive programme evaluations without control groups, almost universally report positive findings. The methodologically strong study by Beaman's RCT reports null findings for soft skills. The quasi-experimental studies with control groups occupy the middle ground, but with important qualifications in each: small samples in Ocansey et al. (2023) and Malete et al. (2022), partial instrument validation in Harun & Salamuddin (2010), and a culture-specific context in Wang et al. (2024). This inverse relationship between design quality and positive effect need to be taken into account for interpreting the results.

The second observation is that cross-sectional designs cannot distinguish between three fundamentally different explanations for the positive associations they find. The first explanation is that sport participation produces soft skill development, which is the causal claim that SFD policy

investment depends on. The second is that young people with higher existing soft skill levels are more likely to participate in organised sport or to remain in SFD programmes, which adds a selection effect that would produce positive associations without any programme effect. The third is that both sport participation and soft skill levels are driven by a common third variable, such as family support, school quality, socioeconomic stability, or individual motivation, which would again produce associations without causal effects. None of the 14 cross-sectional studies in the review can rule out the second or third explanations, and several show design features, such as sampling exclusively from programme participants without a non-participant comparison group, that make selection effects particularly plausible (Burnett, 2022; Nyanyofio et al., 2024; Ocansey et al., 2023; Woodcock et al., 2012). This does not mean that the positive associations reported in these studies are meaningless, but it does mean that they cannot be read as evidence that the programmes caused the observed soft skill levels.

The third observation concerns publication bias. This review included only peer-reviewed journal articles, and peer-reviewed publication is known to systematically favour positive and statistically significant findings over null results (Rothstein et al., 2005). The one null result in the review by Beaman et al. (2021) was published in a leading development economics journal partly because its RCT design and large sample made it credible and important regardless of its direction. Null results from smaller, weaker studies are less likely to reach publication, meaning that the evidence base available for this review almost certainly overrepresents positive findings relative to the true distribution of SFD programme effects. The predominantly positive tone of the included literature should therefore be understood partly as a feature of publication filtering rather than solely as a reflection of programme effectiveness. This does not mean the field is systematically misleading, it means the available evidence base could be structurally skewed in a direction that favours optimistic conclusions, and that systematic reviews must acknowledge and correct for this skew in their interpretation.

Taken together, these three observations lead to a conclusion that is more cautious than the raw frequency of positive findings would suggest. The quantitative evidence base on SFD and soft skills in LMICs is consistent in direction but fragile in quality, as was argued by Hermens et al., (2017). The associations reported across the majority of included studies are real in the statistical sense, that sport participants do tend to score higher on soft skill measures than non-participants in the same studies, but the causal inference that SFD programmes produce these differences is supported by only a small number of controlled studies, and the strongest of those controlled studies found no effect. The field therefore faces an evidence quality problem that cannot be resolved by accumulating more cross-sectional studies as was proposed by Schulenkorf et al., (2016). What is needed is not more associations but more experiments, more control groups, and more measurement instruments capable of detecting genuine change over time. This agenda is taken up in section 5.5.

5.2.2 The Beaman Paradox: Null Soft Skills, Positive Labour Market Effect

The finding that most demands interpretive attention in this review is not one of the many positive associations reported across the cross-sectional literature. It is the coexistence, within a single well-designed study, of two results that should not logically occur together if the conceptual framework underlying this review is correct. Beaman et al. (2021) found no statistically significant improvement in any measured soft skill outcome across a six-month NGO-led programme involving 1,200 vulnerable young people in Liberia, while simultaneously finding a significant positive effect on labour force, with effects strongest among the most disadvantaged participants in the sample. If soft skill development is the mechanism through which SFD participation produces employability outcomes, then a programme that improves employment without improving soft skills should not exist. Yet it does, and it is the most methodologically credible study in the review. This paradox deserves serious interpretive engagement, and it can be approached from two directions.

The first interpretation is that the soft skill measurement instruments used in the Beaman study were insufficiently sensitive to detect genuine changes that did occur. As noted in sections 4.2.1 and 4.3, Beaman et al. (2021) measured soft skill outcomes using a composite Psychosocial Index, a Rosenberg Self-Esteem Scale, a Rotter-style Locus of Control Index, and several scenario-based aggression and risk behaviour indices, none of which were independently validated as standalone soft skill measurement instruments in the Liberian context. The LSSS, which is the most widely validated instrument for soft skill measurement in SFD contexts and which was used in eight other studies in this review, was not deployed. It is therefore possible that genuine improvements in teamwork, communication, leadership, or self-management did occur among programme participants but were not captured by the instruments available to the study. This interpretation would preserve the logic of the conceptual framework, that soft skills did develop and the programme worked as intended, but would locate the problem at the level of measurement rather than programme effectiveness. If this interpretation is correct, it has a direct and important implication: the field urgently needs validated, context-sensitive instruments capable of detecting soft skill change in LMIC populations, and the absence of such instruments in otherwise well-designed studies represents a critical gap that undermines the field's ability to evaluate its own programmes.

The second interpretation is more challenging and more consequential for the conceptual framework of this review. It is possible that the Beaman programme genuinely did not produce measurable soft skill development, that the measurement instruments, however imperfect, were broadly correct in their null finding and that the positive labour market effect was produced through a different mechanism entirely. Several alternative pathways from SFD participation to labour market outcomes are plausible and do not require soft skill development as the mediating step. Social network effects are one candidate: participation in a structured programme connects young people to peers, coaches, facilitators, and community networks that may provide job referrals, information about employment opportunities, or social capital that improves labour market access independently of any skill change. Signalling effects are another: completing a recognised programme may function as a credential or signal of reliability and commitment to potential employers, regardless of whether the competencies the programme was designed to build were actually acquired. Motivational or aspirational effects represent a third possibility: the programme may have shifted participants' orientation toward employment and their confidence in seeking work, their willingness to present themselves to employers, their belief that employment is attainable was increased, without necessarily changing the underlying soft skill competencies that instruments like the LSSS are designed to measure.

If any of these alternative pathways is operating, the implications for this review's conceptual framework are significant. The framework, established in section 2.5, positions soft skill development as the mediating mechanism between SFD participation and employability outcomes, directly relevant to SDG 8. The Beaman finding raises the possibility that this chain of SFD participation produces soft skills and soft skills produce employability may be incomplete or partially incorrect, and that SFD programmes may influence labour market outcomes through pathways that bypass measurable soft skill development entirely. This does not invalidate the importance of soft skills as developmental outcomes in their own right, nor does it mean that SFD programmes cannot build soft skills under the right conditions, as the positive controlled findings from Malet et al. (2022), Wang et al. (2024), and others suggest. But it does mean that the assumption underlying much of the SFD policy rationale rests on a causal chain that has not been empirically validated end-to-end in any included study, and that the one study which measured both the intermediate outcome and the final outcome found the intermediate link missing.

The Beaman paradox therefore raises three distinct but connected challenges for the field. The first is a measurement challenge: current instruments may not be sensitive enough to detect the soft skill

changes that well-designed programmes produce. The second is a conceptual challenge: the assumed pathway from SFD participation through soft skill development to employability outcomes has not been empirically validated as a complete chain and may be incomplete. The third challenge is the construct validity, that soft skills most commonly measured in SFD research may not be the same as the soft skills most relevant to labour market entry in LMIC contexts. Resolving these challenges requires studies that measure soft skills with validated, context-sensitive instruments, track participants longitudinally from programme participation through to labour market outcomes, and test the mediation pathway explicitly rather than assuming it. No such study currently exists in the quantitative SFD literature for LMICs, and designing one is the most important methodological contribution future research in this field could make.

5.2.3 The Geographic Skew

The conceptual framework established in section 2.5 was built around a specific image of the SFD landscape (Svensson & Woods, 2017; Welty Peachey et al., 2020). NGO-led or community-based programmes operating in sub-Saharan African or Latin American LMIC contexts, targeting youth facing structural barriers to labour market entry, and using sport as a vehicle for developing the transferable competencies that employability requires. The search strategy was designed to capture this landscape, and the inclusion criteria were drawn to reflect it. It is therefore a substantive and unanticipated finding of this review that approximately one quarter of the included studies originate from Chinese physical education or university sport contexts, making China the single largest national contributor to the evidence base. This geographic skew is not a minor distributional trait.

The five Chinese studies (Chen et al., 2026; Liu et al., 2022; Wang et al., 2024; Xia et al., 2025; Xue et al., 2026) were included because they met the pedagogical intentionality criterion adopted in the methodology of this review: all involve structured, sport-based programmes with explicit non-sport developmental objectives, implemented in a country classified as a middle-income economy by the World Bank (2025) at the time of the search. Their inclusion is therefore methodologically defensible. However, the structural, institutional, and cultural conditions in which these studies are embedded differ from those of sub-Saharan African or Latin American SFD contexts in ways that are analytically consequential and that limit the degree to which their findings can be synthesised with the rest of the evidence base without qualification.

The Chinese studies are all set within formal educational institutions where physical education is compulsory, state-funded, and systematically implemented. This stands in sharp contrast to NGO-led and community-based SFD programmes in sub-Saharan Africa, which typically operate outside formal educational structures, depend on short-term donor funding, and rely on facilitators with variable training. A positive finding from a Chinese university PE course establishes what is possible under well-resourced, institutionally supported conditions, but it does not establish what is achievable in the resource-constrained, community-based settings where most SFD investment is directed.

A related difference concerns the target population and its proximity to the labour market. The Chinese studies are predominantly set in university or vocational college contexts, with participants aged approximately 18 to 22 and embedded in formal educational pathways that already provide structured routes toward employment. The soft skill development documented in these studies occurs within a broader institutional infrastructure that includes career services, academic credentials, and social networks oriented toward formal employment. Youth in the NGO-led African SFD programmes, by contrast, are often not in education or training (Cieslik et al., 2022), face informal labour markets accounting for approximately 62% of total employment in many LMIC contexts (Enfield, 2021), and may have limited access to the institutional bridges that connect soft skill development to actual labour

market entry. The relevance of soft skill gains for employment outcomes is therefore structurally different across these two populations.

It would be wrong to conclude from these differences that the Chinese studies contribute nothing of value to this review. Methodologically, the Chinese cluster provides the clearest evidence that structured, pedagogically intentional sport programmes can produce measurable soft skill gains under controlled or quasi-controlled conditions. Xia et al. (2025) and Wang et al. (2024) in particular offer well-designed studies with control groups and validated instruments that demonstrate causal plausibility for soft skill development through sport. This matters for the review's central question because it establishes that the null result in Beaman et al. (2021) is not evidence that sport-based interventions cannot produce soft skill gains under any conditions, but it is evidence that this particular programme, in this particular context, with these particular instruments, did not produce detectable gains. The contrast between Beaman's null result and the positive controlled findings from the Chinese cluster is analytically useful in a limited sense: it establishes that sport-based interventions can produce soft skill gains under well-resourced institutional conditions, and therefore that the null result in Beaman reflects the limits of that particular programme in that context rather than an absolute ceiling on what sport-based interventions can achieve. It does not, however, answer the question of what is achievable under the resource-constrained, community-based conditions typical of African SFD programmes.

The geographic skew also constitutes a finding about the state of the field itself. The fact that the largest single-country contribution to a systematic review of SFD and soft skills in LMICs comes from Chinese PE research reflects a broader pattern in the quantitative development research literature: countries with stronger research infrastructure, larger academic publishing traditions, and greater institutional investment in educational research produce more peer-reviewed quantitative studies, regardless of whether those studies are the most relevant to the development questions that motivate systematic reviews. Sub-Saharan Africa, which is the region most associated with SFD in policy discourse and where the need for evidence-based intervention is arguably greatest, is represented by eight studies in this review, several of which are methodologically limited. This asymmetry between policy relevance and research volume is itself an important finding and is discussed further in section 5.5 in relation to research implications.

The synthesis conclusion from this sub-section is therefore twofold. First, the positive findings from the Chinese cluster should be interpreted as evidence of what structured sport-based programmes can achieve under favourable institutional conditions, not as direct evidence of what NGO-led SFD programmes in sub-Saharan Africa or Latin America are likely to produce. Second, the geographic distribution of the evidence base reflects structural inequalities in research capacity across LMIC regions that systematically underrepresent the contexts most relevant to SFD policy, and that future investment in SFD research should explicitly prioritise sub-Saharan African and Latin American contexts with the methodological rigour currently concentrated in the Chinese literature.

5.2.4 The Coaching Mechanism

Across the four studies examining the coach-athlete relationship as a mechanism for soft skill development (Freire et al., 2024; Freire et al., 2025a; Freire et al., 2025b; Ricketts et al., 2025), accompanied by Vahdani et al., (2025) and supported by the positive controlled findings from school PE studies emphasising motivational climate (Xia et al., 2025; Xue et al., 2026), the quality of coaching consistently and significantly predicted soft skill outcomes across countries, sport types, and age groups. This finding is theoretically grounded, empirically consistent, and practically consequential, and it reframes the intervention type comparison conducted in section 4.5 in an important way: the

question of which programme type produces the most consistent soft skill outcomes may be less important than the question of what quality of facilitation any programme type provides.

Self-Determination Theory (SDT; Ryan & Deci, 2000) proposes that human motivation and psychological development are optimised when three basic psychological needs; autonomy, competence, and relatedness are satisfied. The findings of this review align precisely with this theoretical prediction. In Ricketts et al. (2025), coach autonomy support significantly predicted life skills acquisition among secondary school athletes in Botswana ($\beta = 0.45$, $p < 0.001$). In Vahdani et al. (2025), satisfaction of all three basic psychological needs significantly predicted all eight LSSS subscales among Iranian university sport participants, with autonomy satisfaction emerging as the strongest individual predictor (β range 0.18 to 0.42). In Freire et al. (2025a) and Freire et al. (2025b), motivation and coach-athlete relationship quality respectively mediated the pathway from autonomy-supportive coaching to life skills development, providing structural evidence for the SDT mechanism rather than merely associating its components.

The coach-athlete relationship (CAR) as a conceptual construct adds a relational dimension to the SDT framework that is particularly relevant in SFD contexts. Jowett & Ntoumanis (2004) conceptualise the CAR through three dimensions, closeness, commitment, and complementarity and research consistently demonstrates that higher-quality CARs predict positive psychosocial outcomes among youth (Jowett, 2017). In the present review, Freire et al. (2024) is the most direct test of this relationship in an LMIC context, tracking 78 Brazilian handball players prospectively across one competitive season and finding that the quality of the coach-athlete relationship significantly predicted improvements across seven of eight LSSS subscales, with a large total life skills effect size ($ES = 0.96$). The one null result in that study for teamwork is itself interpretable within the CAR framework. Teamwork competencies in an established sport club context may already be at ceiling at baseline, leaving limited variance for the coach-athlete relationship to explain, whereas competencies more dependent on individual coach guidance show the greatest sensitivity to CAR quality.

The pedagogical models literature within PE provides an additional layer of theoretical support for this finding. As noted in section 2.4.2, life skills development in sport occurs through both implicit and explicit processes (Holt et al., 2017). The Teaching Personal and Social Responsibility (TPSR) model (Hellison, 2011) suggests, that TPSR-based programmes can promote responsibility, self-control, leadership, and other positive youth development outcomes across diverse contexts (Escartí et al., 2010; Pozo et al., 2018). Several of the positive PE-based findings in this review, such as Xia et al. (2025) with its problem-based learning volleyball format and Xue et al. (2026) with its empowering motivational climate intervention, draw on pedagogical designs explicitly informed by this tradition, suggesting that the positive outcomes in those studies reflect not just sport participation but the implementation of evidence-based facilitation frameworks. This reinforces the conclusion that programme design and facilitation quality, rather than sport type or programme structure, are the operative mechanisms through which soft skill development occurs.

If coaching quality and pedagogical intentionality are the primary determinants of soft skill outcomes, then the intervention type comparison conducted in section 4.5 is necessarily incomplete as an explanation of why some programmes show positive findings and others do not. The null result in Beaman et al. (2021) occurred in an NGO-led programme delivered by Mercy Corps, an organisation with significant implementation capacity, but the study provides no data on the quality of coach-athlete relationships, the degree of autonomy support provided by facilitators, or the pedagogical intentionality of the session design beyond its structural description. It is therefore impossible to determine from the Beaman study whether the null result reflects a fundamental limitation of sport-based soft skill development in this context or whether it reflects variable facilitation quality that

diluted programme effects across the large sample. Conversely, the positive findings from Malete et al. (2022) and Mandigo et al. (2018), the two highest-quality NGO-led studies in the review, are both programmes with explicit pedagogical frameworks and trained facilitators, suggesting that facilitation quality may be a confounding variable that partially explains the quality differences within the NGO-led cluster.

This convergence of SDT theory, CAR research, pedagogical models literature, and the empirical pattern of this review points toward a single practical conclusion that has significant implications for how SFD programmes are designed, implemented, and evaluated: sport participation itself is not the most active ingredient in soft skill development. The active ingredient is the quality of the human relationship and the intentionality of the pedagogical environment within which sport participation occurs. A football programme delivered by an autonomy-supportive, relationally engaged coach with explicit life skills objectives built into session design is a fundamentally different developmental intervention from a football programme delivered by an authoritarian or disengaged coach focused primarily on sport performance, even if the two programmes are structurally identical in terms of sport type, session frequency, and duration. The quantitative evidence base of this review cannot resolve this distinction but the consistent pattern across the CAR cluster, supported by the established theoretical frameworks, makes a strong case that future SFD research and evaluation must measure coaching quality and pedagogical intentionality as core programme variables rather than treating them as implementation details. The implications of this conclusion for practice, policy, and research design are taken up in section 5.5.

5.3 CONNECTION TO THE CONCEPTUAL FRAMEWORK

The conceptual framework established in section 2.5 links SFD participation to soft skill development to employability outcomes relevant to SDG 8. The present section evaluates how well the empirical evidence supports each link in that chain and where the framework requires revision.

SFD Interventions Reach and Engage LMIC Youth

The 21 included studies collectively enrolled approximately 6,500 participants across 14 LMIC countries, confirming that structured sport-based programmes are operational and accessible to youth across multiple world regions, consistent with the mapping conducted by Svensson & Woods (2017). This link in the framework requires no revision. What the evidence does not confirm, however, is that the programmes reaching youth are systematically designed with the pedagogical intentionality that the framework identifies as necessary for soft skill development to occur as a qualification that becomes critical at the next link.

Structured Participation Produces Soft Skill Development

The second and most central link in the framework, that structured SFD participation produces measurable development across the seven SSC receives qualified and design-dependent support from the evidence. 20 of 21 studies report positive associations, but the only large-scale RCT returns a null result, and the conditions under which positive effects can be reliably produced remain insufficiently understood. The framework's assumption that structured SFD participation produces soft skill development is therefore neither confirmed nor refuted by the available evidence it is conditionally supported, with the conditions being adequate programme design, facilitation quality, and measurement sensitivity, none of which are consistently present across the evidence base.

A more specific qualification concerns the coverage of the SSC framework itself. The framework positioned all seven soft skill categories as empirically assessable outcomes of SFD participation, but the review found that critical thinking (CRIT) is entirely unmeasured across the literature, and

adaptability (ADAPT) is measured with such instrument heterogeneity as to limit cross-study comparability. The empirical chain from SFD participation to soft skill development can therefore only be evaluated for five of the seven categories; SELF, TEAM, LEAD, COMM, and PROB and even within those five, the evidence is predominantly associational. This represents a significant gap between the framework's theoretical ambition and the field's current measurement capacity. The present review confirms that this measurement gap persists and extends it. It is not simply that quantitative studies are limited, but that the quantitative studies that exist are measuring a restricted subset of the outcomes identified within the SSC framework.

The coaching mechanism proposed in the framework as the operative condition for soft skill development receives the strongest empirical support of any element in the conceptual model. Across five studies in three countries, coaching quality and autonomy-supportive behaviour consistently and significantly predicted soft skill outcomes (Freire et al., 2024; Freire et al., 2025a; Freire et al., 2025b; Ricketts et al., 2025; Vahdani et al., 2025), directly confirming the framework's proposition, grounded in SDT (Ryan & Deci, 2000) and the CAR literature (Jowett & Ntoumanis, 2004), that sport participation alone does not produce soft skill development but that structured facilitation characterised by autonomy support and relational quality enables the translation of sport engagement into transferable competencies.

The Third Link: Soft Skill Development Mediates Employability Outcomes

The third link in the SSC framework, that soft skill development functions as the mediating mechanism between SFD participation and employability outcomes relevant to SDG 8, falls entirely outside the scope of what the included studies can confirm. No study in the review measured both soft skill outcomes and employment outcomes as part of the same analytical chain, with the single exception of Beaman et al. (2021), which found a positive employment effect in the absence of any measured soft skill improvement, which directly challenges the assumption that soft skill development is the necessary mediating mechanism. As argued in section 5.2.2, this null finding at the intermediate link does not definitively disprove the framework but it does mean that the third link remains empirically unvalidated and theoretically contested. The framework's assumption that soft skills are the mechanism through which SFD participation translates into employment outcomes is, at present, a theoretical proposition that has not been tested in any quantitative SFD study in LMICs. This is the most significant gap between the conceptual ambition of the framework and the current state of the evidence, and it is the gap that future research must prioritise closing. The construct misalignment possibility raised by the Beaman paradox operates primarily at the level of measurement instruments rather than at the level of the SSC themselves, since the categories are defined broadly enough to encompass the competencies identified in LMIC-relevant employability research. However, this assumption has not been empirically tested in the contexts represented by this review and represents a theoretical boundary condition of the framework.

Beyond the measurement level, this gap also connects to a broader limitation noted in the employability literature itself. Guilbert et al. (2015) describe employability as a multidimensional construct embedded within educational, organisational, and individual conditions, none of which can produce employability outcomes in isolation. Forrier & Sels (2003) similarly emphasise that individuals interact with structural labour market conditions in determining actual employment outcomes. In many of the LMIC contexts represented in this review, youth unemployment is driven not only by skill deficits but by structural factors including informal labour market dominance, limited formal sector employment opportunities, geographic barriers to job access, and discriminatory hiring practices (Cieslik et al., 2022; Enfield, 2021). Soft skill development, even if reliably achieved through SFD participation, may therefore be a necessary but insufficient condition for improved employment

outcomes in these contexts. The Beaman finding suggests it may need to be repositioned as a co-determinant of whether soft skill gains translate into employment outcomes, meaning that SFD effectiveness evaluations in LMICs need to measure structural barriers alongside individual skill development to produce interpretable results.

Revised Understanding of the Framework

In light of the empirical findings, the three-link conceptual chain established in section 2.5 requires three specific and named revisions.

Revision 1: The first arrow is conditional. The causal arrow from SFD participation to soft skill development must be annotated as conditional on coaching quality and pedagogical intentionality. The evidence from the coach-athlete relationship cluster (Freire et al., 2024; Freire et al., 2025a; Freire et al., 2025b; Ricketts et al., 2025) and from the pedagogically intentional PE studies (Xia et al., 2025; Xue et al., 2026) consistently demonstrates that these conditions are not merely facilitative but necessary. Sport participation in the absence of autonomy-supportive facilitation and explicit life skills objectives cannot be assumed to produce soft skill outcomes. The original framework treated facilitation quality as background context; the revised framework treats it as a gating condition on the first causal link.

Revision 2: The soft skill development box covers five of seven SSC. The soft skill development component of the framework must be annotated to reflect the actual measurement coverage of the available evidence. Five SSC (SELF, TEAM, LEAD, COMM, PROB) are measurable with existing validated instruments and are supported by at least associational evidence across multiple studies. ADAPT is measurable but with such instrument heterogeneity that cross-study comparability is limited. CRIT is entirely unmeasured. The revised framework therefore shows a soft skill development component that is empirically accessible for five categories, partially accessible for one, and inaccessible for a category associated with formal sector employability in knowledge-intensive labour markets.

Revision 3: The third arrow is empirically unvalidated. The arrow from soft skill development to employability outcomes must be explicitly marked as a theoretical proposition rather than an empirically established relationship. No study in the review has validated this link end-to-end. Beaman et al. (2021) measured both the intermediate outcome (soft skills) and the final outcome (labour market participation) but found the intermediate link absent while the final outcome was significant. This does not disprove the framework, but it means the third arrow cannot be drawn as a solid causal connection. It should be understood as a hypothesis to be tested, with alternative pathways.

These three revisions do not invalidate the framework as an analytical tool for structuring the review. They make explicit what the original framework assumed: that facilitation quality matters, that measurement coverage is incomplete, and that the pathway from soft skills to employment has not been confirmed. A future study that measured all seven SSC with validated instruments, tracked participants longitudinally from programme entry to labour market entry, and tested the mediation pathway explicitly would be the first study capable of validating the framework as originally constructed.

5.4 LIMITATIONS

This review has several limitations that must be considered when interpreting its findings. They are organised below across four distinct categories: reviewer process, methodological heterogeneity of included studies, geographic representativeness, and publication bias.

Single Reviewer and Selection Bias Risk

The screening, eligibility assessment, data extraction, and quality appraisal processes were conducted by a single reviewer throughout. Standard systematic review methodology recommends independent dual review at each stage to establish inter-rater reliability and reduce the risk of systematic selection bias (Page et al., 2021). The absence of a second reviewer means that inclusion and exclusion decisions cannot be identified or corrected through comparison, and that the MMAT quality scores assigned to each study reflect a single reviewer's judgement rather than a consensus assessment. To mitigate this limitation, ambiguous eligibility decisions were resolved by returning systematically to the pre-specified inclusion and exclusion criteria. The extraction table was piloted on two to three studies before full application to reduce inconsistency in data recording. These steps reduce but do not eliminate the risk of selection and appraisal bias.

Methodological Heterogeneity of Included Studies

The most consequential limitation of this review is not a feature of the review process itself, but a structural characteristic of the evidence base it synthesised. The 20 included interventions differ substantially in design type, sample size, participant age and gender, intervention duration and format, measurement instruments, and outcome reporting, to a degree that makes statistical aggregation inappropriate and narrative synthesis difficult to conduct without substantial qualification at every step. As documented in sections 4.2 through 4.5, this heterogeneity means that findings cannot be directly compared across studies, that patterns identified through narrative synthesis are necessarily uncertain, and that the overall conclusions of the review rest on an evidence base that is too internally diverse to support strong cumulative claims. This is a limitation of the field rather than of this review specifically, but it nonetheless constrains what this synthesis can conclusively establish.

A specific manifestation of this heterogeneity concerns measurement instruments. Even where the same SSC category is measured across two studies, the instruments may be capturing different facets of the underlying construct, meaning that a positive finding for SELF in one study and a positive finding for SELF in another may not reflect the same competency. The mapping of instrument subscales onto SSC categories, documented in the extraction table and described in section 4.3, was conducted transparently, but the degree of construct alignment varies across studies, and this variation cannot be fully resolved through narrative synthesis alone.

Geographic Skew and Generalisability

As discussed in section 5.2.3, the geographic distribution of included studies does not reflect the distribution of SFD activity or policy need across LMICs. This skew means that the evidence base is disproportionately shaped by institutional contexts that differ structurally from the community-based, resource-constrained environments in which most SFD investment is directed. The positive findings from the Chinese and Brazilian clusters, while methodologically credible within their own contexts, cannot be assumed to transfer to sub-Saharan African or Central American SFD settings without further context-specific evidence. The generalisability of this review's conclusions to the LMIC contexts most relevant to international SFD policy is therefore limited, and findings should be interpreted as representative of where quantitative SFD research is being conducted rather than where SFD programmes are most needed or most active.

A related limitation concerns the age range of included participants. Although the review adopted an inclusive definition of youth spanning 13 to 24 years, several included studies sampled university or vocational college students with mean ages of 19 to 22, who are at a substantially different developmental stage and institutional proximity to the labour market than the 13 to 16 year old secondary school students in other studies. The soft skill development needs, baseline competency levels, and programme responsiveness of these sub-groups may differ considerably, and the review's synthesis does not fully resolve this heterogeneity. Findings from university PE studies should not be read as directly applicable to early adolescent SFD participants, and vice versa.

Publication Bias

This review included only peer-reviewed journal articles published between 2010 and 2026, a decision that introduces a well-documented form of selection bias. Peer-reviewed publication systematically favours statistically significant and positive findings over null results, meaning that SFD programme evaluations that found no soft skill effects are less likely to have been published and therefore less likely to have been captured by this review's search strategy (Rothstein et al., 2005). The single null result in the review reached publication in a leading economics journal because its RCT design and large sample made it credible and important regardless of its direction. Smaller null results from weaker designs are unlikely to have achieved comparable publication success, meaning the true distribution of effect directions across all SFD evaluations ever conducted is almost certainly less positive than the distribution visible in the peer-reviewed literature. The implications of this bias are discussed in section 5.2.1. This bias is most consequential for the NGO-led cluster, where the majority of the positive findings come from small, underpowered evaluations that are most vulnerable to publication filtering. The true null result rate among NGO-led SFD programmes is likely higher, which has direct implications for the confidence that can be placed in the cluster's apparently positive evidence direction.

Focus on Quantitative Evidence

This review deliberately restricted inclusion to studies with extractable quantitative data, which means that a substantial body of qualitative SFD research was excluded from the synthesis. This decision was methodologically justified, as the central research question asks what quantitative evidence exists. But it does create a gap in the completeness of the picture this review can provide. Qualitative studies of SFD programmes in LMICs have documented implementation processes, participant experiences, contextual barriers, and facilitator behaviours that help explain why quantitative effects are or are not produced. By excluding this evidence, the review cannot draw on process-level data to account for null results such as Beaman et al. (2021) or to explain why coaching quality appears to moderate outcomes across contexts. The comparison with the qualitative literature offered in the theoretical background and chapter 5 partially compensates for this gap, but it remains a limitation that the synthesis rests entirely on outcome data without the contextual and process evidence that would allow those outcomes to be more fully interpreted.

5.5 IMPLICATIONS FOR PRACTICE, POLICY, AND RESEARCH

The findings of this review carry direct implications across three domains. Each is addressed in turn, with recommendations grounded specifically in the evidence assembled in this review rather than in generic SFD field recommendations.

Implications for Practice

The most actionable finding for SFD programme designers and implementing organisations is the consistent evidence that coaching quality and autonomy-supportive facilitation are stronger

determinants of soft skill outcomes than programme type, sport format, or intervention duration (see sections 4.4 and 5.2.4). For practitioners, this means that investment in facilitator training and relational quality is likely to be more effective in producing soft skill gains than investment in programme scaling or sport infrastructure alone. Organisations designing or redesigning SFD programmes should embed explicit coaching quality standards into their programme frameworks, staff recruitment criteria, and ongoing supervision structures, rather than treating facilitation quality as an implementation detail secondary to programme content.

The second practice implication concerns measurement. The near-universal reliance on self-report instruments, the dominance of a single measurement tool in the form of the LSSS, and the use of custom unvalidated scales in several studies collectively indicate that the field lacks a standardised, context-sensitive measurement framework for soft skill outcomes in LMIC SFD contexts. Implementing organisations, including those operating under UNESCO Chair networks, IOC Olympism365 partnerships, and major international NGOs, should adopt validated instruments, prioritising the LSSS where cross-cultural validation exists for the target population, and the CAAS where career adaptability is a primary programme objective and build pre- and post-measurement into programme cycles as a minimum standard. The absence of follow-up assessment across all but one included study means that no implementing organisation in this review's evidence base can currently demonstrate that their soft skill gains persist beyond the programme period. Building in follow-up measurement at six and twelve months post-programme should be treated as an operational priority rather than an optional research enhancement.

The third practice implication follows directly from the CRIT absence identified in section 4.3. Critical thinking is entirely unmeasured across the quantitative SFD literature in LMICs, yet it is represented within the SSC framework as one of the seven employability-relevant soft skill categories and is increasingly emphasised in labour market research as a differentiating competency in LMIC formal sector employment (Poláková et al., 2023). Programme designers should examine whether their interventions explicitly target critical thinking development through structured reflection, problem-based sport formats, or structured post-session reflection and debriefing designed explicitly to surface and transfer critical reasoning from sport to broader contexts, and should work with researchers to develop and validate context-appropriate measurement approaches for this construct. Its absence from the literature is as much a programme design gap as a measurement gap. It should be noted that the centrality of critical thinking to labour market entry may be more pronounced in formal sector and technology-intensive employment contexts than in the informal labour markets that characterise many of the LMIC settings represented in this review; future research should therefore investigate not only how to measure CRIT in SFD contexts but whether and under what labour market conditions its development is most consequential for youth employment outcomes.

Implications for Policy

The central policy implication of this review is that current SFD investment by international bodies including UNESCO, the IOC, and national governments is proceeding ahead of the evidence base that would justify its scale and direction. The only large-scale RCT in the review found no measurable soft skill improvement despite a positive labour market effect, and the predominantly positive findings from weaker designs cannot substitute for the controlled evidence that policy investment of this magnitude requires. This does not mean that SFD investment should be reduced or redirected. The positive controlled findings from Malet et al. (2022), Mandigo et al. (2018), Wang et al. (2024), and others demonstrate that well-designed programmes can produce measurable soft skill gains, but it does mean that funding bodies should attach evidence requirements to SFD investment that go beyond programme reach and participation metrics. Specifically, UNESCO's Fit for Life programme and

the IOC's Olympism³⁶⁵ strategy, both of which are actively scaling SFD investment across LMIC contexts (UNESCO, 2025; IOC, 2025), should prioritise funded programmes that incorporate pre- and post-measurement of soft skill outcomes using validated instruments as a baseline expectation, and should create shared data infrastructure that allows findings to accumulate across programmes and contexts.

A second policy implication concerns the alignment between SFD investment and SDG 8. As documented in section 4.5, NGO-led SFD programmes show an explicit alignment with SDG 8 on Decent Work and Economic Growth, but their evidence base is the most methodologically mixed of the four intervention types in this review. Policymakers seeking to justify SFD investment through SDG frameworks need outcome evidence that speaks specifically to the soft skill-to-employment pathway, not merely to soft skill development in isolation. The Beaman paradox, discussed in section 5.2.2, demonstrates that the assumed pathway from soft skill gains to employment outcomes has not been empirically validated in any LMIC SFD context and cannot be taken for granted. National governments and international bodies integrating SFD into youth employment strategies should commission longitudinal evaluations that track participants from programme entry through to labour market outcomes, explicitly testing the mediation pathway that current policy rationales assume but that the evidence base has not yet confirmed.

A third policy implication concerns geographic investment in research capacity. The disproportionate representation of Chinese PE studies in this review reflects a broader structural inequality in research production across LMIC regions. Sub-Saharan Africa, which hosts the largest concentration of NGO-led SFD activity globally, produced eight studies in this review, several of which are methodologically limited by resource constraints on study design and measurement. Funding bodies should systematically co-fund evaluation components alongside programme implementation, building local research capacity and generating the LMIC-specific quantitative evidence base that this review demonstrates is currently insufficient.

Implications for Research

The most urgent research implication of this review is the need for longitudinal randomised or quasi-experimental studies that measure both soft skill outcomes and employment outcomes within the same design, explicitly testing the mediation pathway from SFD participation through soft skill development to labour market entry. No such study currently exists in the quantitative LMIC SFD literature. The closest approximation by Beaman et al. (2021) measured both outcomes but found the intermediate link missing, raising the possibility that the assumed mechanism is incorrect or incomplete. Future studies should be designed to resolve this ambiguity by including both LSSS-validated soft skill measurement and objective employment outcome data, measured at programme completion and at a minimum of twelve months follow-up, with randomised or matched control groups and samples large enough to detect small to moderate effect sizes reliably.

The second research implication concerns instrument development. The complete absence of critical thinking measurement across 21 included studies, and the heterogeneous operationalisation of adaptability across eight studies, point to a measurement infrastructure gap that cannot be resolved through more studies using existing instruments. The field needs the development and cross-cultural validation of instruments specifically designed to capture the SSC categories most directly relevant to employability in LMIC labour market contexts, including critical thinking, adaptability in the sense of career adaptability rather than resilience, and problem-solving in applied rather than sport-specific forms. The CAAS, deployed in Wang et al. (2024) as the only directly employability-relevant measurement instrument in the review, represents a model for the kind of instrument development

that is needed, and its adaptation and validation for use in sub-Saharan African and Latin American SFD contexts would be a high-priority contribution.

The third research implication concerns coaching quality as a programme variable. As argued in sections 5.2.4 and 5.3, the consistent evidence that coaching quality moderates soft skill outcomes suggests that future SFD evaluations should measure coaching quality and pedagogical intentionality as independent variables rather than treating them as background implementation conditions. Studies that systematically vary coaching quality would allow the field to move from the current associational evidence that good coaching predicts good outcomes to the causal evidence that improving coaching quality produces improved outcomes. The TPSR model (Hellison, 2011) and SDT-based coaching frameworks (Mageau & Vallerand, 2003) provide well-developed theoretical foundations for such interventions, and their systematic testing in LMIC SFD contexts represents a natural and high-value next step for the field.

Finally, future systematic work in this field would benefit from a mixed-methods synthesis design that integrates quantitative outcome evidence with qualitative process evidence within a single analytical framework, allowing null results such as Beaman et al. (2021) to be interpreted against implementation-level data that purely quantitative reviews cannot access.

6 CONCLUSION

This review was undertaken in response to a clear and consequential gap in the evidence base supporting one of international development's growing investment areas. Sport for Development has expanded dramatically since the 1990s, with global organisations including UNESCO, the IOC, and the United Nations actively scaling SFD investment through frameworks such as Olympism³⁶⁵ and the Fit for Life programme, justified to some parts by the assumption that structured sport participation develops the soft skills that youth in LMICs need for labour market entry and active social participation. Despite this policy momentum, no previous systematic review had synthesised the available quantitative evidence on soft skill outcomes specifically in LMIC contexts. This review addressed that gap by identifying, screening, and synthesising 21 quantitative and mixed-methods studies involving approximately 6,500 participants across 14 countries, following PRISMA 2020 guidelines and using the SSC framework as its evaluative anchor.

The review finds that the SFD measurement field has converged on a narrow and predominantly interpersonal set of soft skill outcomes. Five of the seven SSC; self-management and responsibility, teamwork and collaboration, leadership, communication skills, and problem-solving are measured with reasonable frequency and primarily through validated instruments, above all the Life Skills Scale for Sport. Adaptability is inconsistently operationalised across eight studies, limiting cross-study comparability. Critical thinking is entirely unmeasured across all 21 included studies. This represents both a measurement gap and a programme design gap the field has not yet addressed.

To answer which types of SFD projects report the most consistent positive outcomes, the answer depends on which criterion defines consistency. If the criterion is methodological quality, school-based PE studies show the strongest average designs and the most uniformly positive findings. If the criterion is employability relevance and alignment with SDG 8, NGO-led SFD programmes are the strongest category, with six of seven studies reporting positive soft skill outcomes and the most direct framing around livelihoods and labour market preparation. These two definitions point in different directions, and given that the central research question concerns employment relevance rather than methodological tidiness, the analytically primary answer is that NGO-led SFD programmes show the most consistent evidence on the outcomes this review was designed to examine. This conclusion must be qualified immediately by the Beaman finding: the only large-scale RCT in the review, and the strongest study in the NGO-led cluster, found no significant soft skill improvement despite a positive labour market effect. The apparently consistent positive findings from the remaining NGO-led studies come from weaker designs that cannot establish causal effects. The answer to sub-question two is therefore: NGO-led SFD programmes are the most relevant intervention type for the employability framing of this review, but their internal evidence quality is too heterogeneous to support a confident conclusion that they reliably build measurable soft skills.

The single most important finding remains the Beaman null result. Its importance lies not only in the absence of measured soft skill gains, but in what it found alongside: a significant positive labour market effect. This disjunction means that the causal chain assumed by SFD policy rationales, that structured sport participation builds soft skills and soft skills improve employment outcomes has not been empirically validated as a complete sequence in any LMIC context. The one study that measured both intermediate and final outcomes found the intermediate link absent. This does not mean SFD cannot build soft skills. Positive controlled findings from Malete et al. (2022), Mandigo et al. (2018), and Wang et al. (2024) demonstrate that well-designed programmes can, but it does mean that the full causal chain from SFD participation through soft skill development to employment outcomes remains empirically unvalidated.

The most practically actionable finding of the review cuts across all intervention types. Coaching quality and autonomy-supportive facilitation, grounded in Self-Determination Theory and the coach-athlete relationship literature, consistently and significantly predicted soft skill outcomes across favours contexts. The available evidence cannot establish causal direction, but the consistency and theoretical grounding of this pattern make it the strongest candidate mechanism in the review. Sport participation alone is unlikely to be the most active ingredient in soft skill development; the intentionality and relational quality of the human environment in which participation occurs is the more plausible determinant.

This review makes three contributions to the field. First, it is the first systematic synthesis of quantitative evidence focused specifically on employability-relevant soft skill outcomes of SFD interventions in LMIC contexts, mapping the measurement landscape and identifying the precise contours of what the evidence base can and cannot establish. Second, it demonstrates that the field's apparent consensus on SFD effectiveness is methodologically fragile, produced largely by cross-sectional designs incapable of causal inference and compounded by publication bias. Third, it identifies the complete absence of critical thinking measurement and the unvalidated status of the SSC-to-employment pathway as the two most consequential gaps in the current evidence base.

The field now faces a clear and well-defined next step. What is needed are longitudinal randomised or quasi-experimental studies that measure both soft skill outcomes and employment outcomes within the same design, explicitly testing the mediation pathway that current policy investment assumes, but that no study has yet confirmed. These studies need validated, context-sensitive instruments covering the full SSC framework, including critical thinking, samples drawn from sub-Saharan African and Latin American contexts most relevant to SFD policy, and follow-up periods long enough to assess whether soft skill gains persist and translate into labour market outcomes. Until that evidence exists, the conclusion that must be drawn from this review is both honest and urgent: sport-based interventions in LMICs show consistent associations with soft skill development and genuine promise for youth employability, but the evidence base is not yet strong enough to guide policy investment with the confidence that the scale of current SFD funding demands. Building that base is the most important task facing the field.

Author's Note

I declare that Generative AI was used in the creation of this Thesis. Generative AI tools (ChatGPT, OpenAI) were used only to assist with language refinement, grammar checking, and improving the clarity and readability of the manuscript. I provided all original ideas, study design, data collection, data analysis and interpretation, and was fully responsible for checking and verifying all AI-assisted text. No generative AI tools were used to generate, manipulate or interpret the data or results. The AI tool used according to the chapters is listed in the following table.

Table on the use of AI-based tools.

Section	Tool	Form of Use
1. Introduction	ChatGPT-5.4 (OpenAI)	improvement of text structures and formulations
2. Theoretical Background	ChatGPT-5.4 (OpenAI)	improvement of text structures and formulations
3. Methodology	ChatGPT-5.4 (OpenAI)	improvement of text structures and formulations
4. Results	ChatGPT-5.4 (OpenAI)	improvement of text structures and formulations
5. Discussion	ChatGPT-5.4 (OpenAI)	improvement of text structures and formulations
6. Conclusion	ChatGPT-5.4 (OpenAI)	improvement of text structures and formulations
Entire work	ChatGPT-5.4 «Grammar Checker» (OpenAI)	Spelling and grammar checking

Table 7: The use of AI-based tools

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8 APPENDIX

8.1 KEYWORD TABLE

Key terms of the topic	Sport for Development	Soft skills	Youth	Low- and middle-income countries
Synonyms	Sport-based intervention, sport as a tool for development, sport-for-change, sport for social outcomes, Sport for Peace	Life skills, transferable skills, social skills, employability skills, interpersonal skills	Adolescents, young people, students, young adults	Developing countries, Global South, emerging economies
General Terms	Development programs, community sport, education through sport, physical activity intervention	Personal development, psychosocial skills, behavioural outcomes, character development	Youth development, education, adolescence, empowerment	Global development, economic development, social inclusion
Sub-terms	NGO projects, school-based programs, community sport initiatives, sport education	Communication skills, teamwork and collaboration, problem-solving, leadership, adaptability and flexibility, critical thinking, self-management and responsibility	School-aged youth, secondary students, disadvantaged youth	Africa, Asia, Latin America, low-resource settings
Related Terms	Sport and social change, sport policy, sport for peace, sport for empowerment	Emotional intelligence, employability, self-efficacy, motivation, social competence	Young learners, sport participants, youth athletes	Low-income settings, resource-constrained countries, development context

Table 8: Keyword table used to construct database search strings (Maurer, 2026).

8.2 SEARCH-STRINGS

8.2.1 PubMed Part 1 and 2

Part 1:

("human development"[Mesh] OR "human development*"[tiab] OR "psychological development*"[tiab] OR "mental development*"[tiab] OR "soft skill*"[tiab] OR "social skill*"[tiab] OR "life skill*"[tiab] OR communication[tiab] OR teamwork[tiab] OR "team work"[tiab] OR collaboration[tiab] OR "problem solving"[tiab] OR "problem-solving"[tiab] OR leadership[tiab] OR adaptability[tiab] OR flexibility[tiab] OR "critical thinking"[tiab] OR "self-management"[tiab] OR "self management"[tiab] OR responsibility[tiab])

AND

("Sports"[Mesh] OR sport*[tiab] OR "sport for development"[tiab] OR "sport-for-development"[tiab] OR "sport based intervention*"[tiab] OR "sport-based intervention*"[tiab] OR "sport for change"[tiab] OR "sport for peace"[tiab] OR "sport for social*"[tiab] OR "physical activity intervention*"[tiab] OR "sport program*"[tiab] OR "sport programme*"[tiab] OR "sport project*"[tiab])

AND ("Adolescent"[Mesh] OR "Youth"[Mesh] OR youth*[tiab] OR adolescen*[tiab] OR "young people"[tiab] OR "young person*"[tiab] OR "young adult*"[tiab] OR teenager*[tiab] OR "school age*"[tiab] OR student*[tiab] OR "secondary school*"[tiab] OR "high school*"[tiab])

AND

(afghan*[tiab] OR africa*[tiab] OR albania*[tiab] OR algeria*[tiab] OR angola*[tiab] OR antigua*[tiab] OR barbuda*[tiab] OR argentin*[tiab] OR armenia*[tiab] OR aruba*[tiab] OR azerbaijan*[tiab] OR bahrain*[tiab] OR bangladesh*[tiab] OR bengal*[tiab] OR bangal*[tiab] OR barbados*[tiab] OR barbadian*[tiab] OR bayan[tiab] OR bajans[tiab] OR belarus*[tiab] OR belorus*[tiab] OR byelarus*[tiab] OR byelorus*[tiab] OR belize*[tiab] OR benin*[tiab] OR dahomey[tiab] OR bhutan*[tiab] OR bolivia*[tiab] OR bosnia*[tiab] OR herzegovin*[tiab] OR botswan*[tiab] OR batswan*[tiab] OR bechuanaland*[tiab] OR brazil*[tiab] OR brasil*[tiab] OR bulgaria*[tiab] OR burkina*[tiab] OR burkinese*[tiab] OR "upper volta"*[tiab] OR burundi*[tiab] OR urundi*[tiab] OR "cabo verde"*[tiab] OR "cape verde"*[tiab] OR cambodia*[tiab] OR kampuchea*[tiab] OR khmer*[tiab] OR cameroon*[tiab] OR cameroun*[tiab] OR "ubangi shari"*[tiab] OR chad*[tiab] OR chile*[tiab] OR china*[tiab] OR chinese[tiab] OR colombia*[tiab] OR comoro*[tiab] OR comore*[tiab] OR comorian*[tiab] OR mayotte*[tiab] OR congo*[tiab] OR zaire*[tiab] OR "costa rica"*[tiab] OR "cote d'ivoir"*[tiab] OR "cote d' ivoir"*[tiab] OR "cote divoir"*[tiab] OR "cote d ivoir"*[tiab] OR "ivory coast"*[tiab] OR ivorian*[tiab] OR croatia*[tiab] OR cuba[tiab] OR cuban[tiab] OR cubans[tiab] OR cuba's[tiab] OR cyprus*[tiab] OR cypriot*[tiab] OR czech*[tiab] OR djibouti*[tiab] OR "french somaliland"*[tiab] OR dominica*[tiab] OR ecuador*[tiab] OR egypt*[tiab] OR "united arab republic"*[tiab] OR "el salvador"*[tiab] OR salvadoran*[tiab] OR guinea*[tiab] OR equatoguinea*[tiab] OR eritrea*[tiab] OR estonia*[tiab] OR eswatini*[tiab] OR swaziland*[tiab] OR swazi*[tiab] OR swati*[tiab] OR ethiopia*[tiab] OR fiji*[tiab] OR gabon*[tiab] OR gabonese*[tiab] OR gabonaise*[tiab] OR gambia*[tiab] OR ((georgia[tiab] OR georgian[tiab] OR georgians[tiab])) NOT (atlanta[tiab] OR california[tiab] OR florida[tiab])) OR ghana*[tiab] OR gibraltar*[tiab] OR greece*[tiab] OR greek*[tiab] OR grecian*[tiab] OR grenada*[tiab] OR grenadian*[tiab] OR guam*[tiab] OR guatemala*[tiab] OR guyana*[tiab] OR guiana*[tiab] OR guyanese*[tiab] OR haiti*[tiab] OR hispaniola*[tiab] OR hondura*[tiab] OR hungary*[tiab] OR hungarian*[tiab] OR india*[tiab] OR indonesia*[tiab] OR iran*[tiab] OR iraq*[tiab] OR "isle of man"*[tiab] OR jamaica*[tiab] OR jordan*[tiab] OR kazakh*[tiab] OR kenya*[tiab] OR karabati*[tiab] OR korea*[tiab] OR kosovo*[tiab] OR kosova*[tiab] OR kyrgyz*[tiab] OR kirgiz*[tiab] OR kirghiz*[tiab] OR laos[tiab] OR lao[tiab] OR laotian*[tiab] OR latvia*[tiab] OR lebanon*[tiab] OR lebanese*[tiab] OR lesotho*[tiab] OR lesothan*[tiab] OR lesothonian*[tiab] OR basutoland*[tiab] OR mosotho*[tiab] OR basotho*[tiab] OR liberia*[tiab] OR libya*[tiab] OR jamahiriya*[tiab] OR lithuania*[tiab] OR macedonia*[tiab] OR madagasca*[tiab] OR malagasy*[tiab] OR malawi*[tiab] OR nyasaland*[tiab] OR malaysia*[tiab] OR "malay federation"[tiab] OR maldives*[tiab] OR maldivian*[tiab] OR "indian ocean"[tiab] OR mali[tiab] OR malian*[tiab] OR mali's[tiab] OR malta[tiab] OR maltese*[tiab] OR malta's[tiab] OR micronesia*[tiab] OR marshallese*[tiab] OR kiribati*[tiab] OR "marshall island"*[tiab] OR nauru[tiab] OR nauran[tiab] OR nauruans[tiab] OR naurian's[tiab] OR mariana[tiab] OR marianas[tiab] OR palau[tiab] OR paluan*[tiab] OR tuvalu*[tiab] OR mauritania*[tiab] OR mauritan*[tiab] OR mauritius*[tiab] OR mexico*[tiab] OR mexican*[tiab] OR moldova*[tiab] OR moldovia*[tiab] OR mongol*[tiab] OR montenegr*[tiab] OR morocco*[tiab] OR moroccan*[tiab] OR ifni[tiab] OR mozambique*[tiab] OR mozambican*[tiab] OR myanmar*[tiab] OR burma*[tiab] OR burmese[tiab] OR namibia*[tiab] OR nepal*[tiab] OR "new caledonia"*[tiab] OR "netherlands antill"*[tiab] OR nicaragua*[tiab] OR niger*[tiab] OR oman[tiab] OR omani[tiab] OR omanis[tiab] OR oman's[tiab] OR pakistan*[tiab] OR palestin*[tiab] OR gaza*[tiab] OR "west bank"*[tiab] OR panama*[tiab] OR paraguay*[tiab] OR peru[tiab] OR peruvian*[tiab] OR peru's[tiab] OR philippine*[tiab] OR philipine*[tiab] OR philippine*[tiab] OR philippine*[tiab] OR filipino*[tiab] OR filipina*[tiab])

Part 2:

("human development"[Mesh] OR "human development*"[tiab] OR "psychological development*"[tiab] OR "mental development*"[tiab] OR "soft skill*"[tiab] OR "social skill*"[tiab] OR "life skill*"[tiab] OR communication[tiab] OR teamwork[tiab] OR "team work"[tiab] OR collaboration[tiab] OR "problem solving"[tiab] OR "problem-solving"[tiab] OR leadership[tiab] OR adaptability[tiab] OR flexibility[tiab] OR "critical thinking"[tiab] OR "self-management"[tiab] OR "self management"[tiab] OR responsibility[tiab])

AND

("Sports"[Mesh] OR sport*[tiab] OR "sport for development"[tiab] OR "sport-for-development"[tiab] OR "sport based intervention*"[tiab] OR "sport-based intervention*"[tiab] OR "sport for change"[tiab] OR "sport for peace"[tiab] OR "sport for social*"[tiab] OR "physical activity intervention*"[tiab] OR "sport program*"[tiab] OR "sport programme*"[tiab] OR "sport project*"[tiab])

AND ("Adolescent"[Mesh] OR "Youth"[Mesh] OR youth*[tiab] OR adolescen*[tiab] OR "young people"[tiab] OR "young person*"[tiab] OR "young adult*"[tiab] OR teenager*[tiab] OR "school age*"[tiab] OR student*[tiab] OR "secondary school*"[tiab] OR "high school*"[tiab])

AND

(poland*[tiab] OR polish[tiab] OR pole[tiab] OR poles[tiab] OR portugal*[tiab] OR portuguese[tiab] OR "puerto ric*"[tiab] OR romania*[tiab] OR russia*[tiab] OR ussr*[tiab] OR soviet*[tiab] OR rwanda*[tiab] OR rwandese[tiab] OR ruanda*[tiab] OR ruandese[tiab] OR samoa*[tiab] OR "navigator island*"[tiab] OR "pacific island*"[tiab] OR polynesia*[tiab] OR "sao tome and principe*"[tiab] OR "sao tomean*"[tiab] OR santomean*[tiab] OR "saudi arabia*"[tiab] OR saudi[tiab] OR saudis[tiab] OR senegal*[tiab] OR serbia*[tiab] OR seychell*[tiab] OR "sierra leone*"[tiab] OR slovak*[tiab] OR sloven*[tiab] OR melanesia*[tiab] OR "solomon island*"[tiab] OR "norfolk island*"[tiab] OR somali*[tiab] OR "sri lanka*"[tiab] OR ceylon*[tiab] OR "saint kitts and nevis*"[tiab] OR "st kitts and nevis*"[tiab] OR kittian*[tiab] OR nevisian*[tiab] OR "saint lucia*"[tiab] OR "st lucia*"[tiab] OR "saint vincent*"[tiab] OR "st vincent*"[tiab] OR vincentian*[tiab] OR grenadine*[tiab] OR sudan*[tiab] OR surinam*[tiab] OR syria*[tiab] OR tajik*[tiab] OR tadjik*[tiab] OR tadzhik*[tiab] OR tanzania*[tiab] OR tanganyika*[tiab] OR thai*[tiab] OR "timor leste*"[tiab] OR "east timor*"[tiab] OR timorese*[tiab] OR togo[tiab] OR togoles*[tiab] OR togo's[tiab] OR tonga*[tiab] OR trinidad*[tiab] OR tobago*[tiab] OR tunisia*[tiab] OR turkiy*[tiab] OR turkey*[tiab] OR turk[tiab] OR turks[tiab] OR turkish[tiab] OR turkmen*[tiab] OR uganda*[tiab] OR ukrain*[tiab] OR uruguay*[tiab] OR uzbek*[tiab] OR vanuatu*[tiab] OR "new hebrides*"[tiab] OR venezuela*[tiab] OR vietnam*[tiab] OR "viet nam*"[tiab] OR yemen*[tiab] OR yugoslav*[tiab] OR zambia*[tiab] OR zimbabwe*[tiab] OR rhodesia*[tiab] OR "arab* countr*"[tiab] OR "middle east*"[tiab] OR "global south"[tiab] OR sahara*[tiab] OR subsahara*[tiab] OR magreb*[tiab] OR maghrib*[tiab] OR "west indies*"[tiab] OR caribbean*[tiab] OR "central america*"[tiab] OR "latin america*"[tiab] OR "south america*"[tiab] OR "central asia*"[tiab] OR "north asia*"[tiab] OR "northern asia*"[tiab] OR "southeastern asia*"[tiab] OR "south eastern asia*"[tiab] OR "southeast asia*"[tiab] OR "south east asia*"[tiab] OR "west asia*"[tiab] OR "western asia*"[tiab] OR "east europe*"[tiab] OR "eastern europe*"[tiab] OR "developing countr*"[tiab] OR "developing nation*"[tiab] OR "developing population*"[tiab] OR "developing world"[tiab] OR "less developed countr*"[tiab] OR "less developed nation*"[tiab] OR "less developed world"[tiab] OR "lesser developed countr*"[tiab] OR "lesser developed nation*"[tiab] OR "lesser developed world"[tiab] OR "under developed countr*"[tiab] OR "under developed nation*"[tiab] OR "under developed world"[tiab] OR "underdeveloped countr*"[tiab] OR "underdeveloped nation*"[tiab] OR "underdeveloped world"[tiab] OR "middle income countr*"[tiab] OR "middle income nation*"[tiab])

OR "middle income population*" [tiab] OR "low income countr*" [tiab] OR "low income nation*" [tiab]
OR "low income population*" [tiab] OR "lower income countr*" [tiab] OR "lower income nation*" [tiab]
OR "lower income population*" [tiab] OR "underserved countr*" [tiab] OR "underserved nation*" [tiab]
OR "underserved population*" [tiab] OR "under served population*" [tiab] OR "under served
nation*" [tiab] OR "under served population*" [tiab] OR "deprived countr*" [tiab] OR "deprived
population*" [tiab] OR "high burden countr*" [tiab] OR "high burden nation*" [tiab] OR "countdown
countr*" [tiab] OR "countdown nation*" [tiab] OR "poor countr*" [tiab] OR "poor nation*" [tiab] OR
"poor population*" [tiab] OR "poor world" [tiab] OR "poorer countr*" [tiab] OR "poorer nation*" [tiab]
OR "poorer population*" [tiab] OR "poorer world" [tiab] OR "developing econom*" [tiab] OR "less
developed econom*" [tiab] OR "underdeveloped econom*" [tiab] OR "under developed
econom*" [tiab] OR "middle income econom*" [tiab] OR "low income econom*" [tiab] OR "lower
income econom*" [tiab] OR "low gdp" [tiab] OR "low gnp" [tiab] OR "low gross domestic" [tiab] OR "low
gross national" [tiab] OR "lower gdp" [tiab] OR "lower gnp" [tiab] OR "lower gross domestic" [tiab] OR
"lower gross national" [tiab] OR lmic [tiab] OR lmics [tiab] OR "third world" [tiab] OR "lami countr*" [tiab]
OR "transitional countr*" [tiab] OR "emerging econom*" [tiab] OR "emerging nation*" [tiab])

8.2.2 Scopus

("human development" OR "human development*" OR "psychological development*" OR "mental development*" OR "soft skill*" OR "social skill*" OR "life skill*" OR communication OR teamwork OR "team work" OR collaboration OR "problem solving" OR problem-solving OR leadership OR adaptability OR flexibility OR "critical thinking" OR self-management OR "self management" OR responsibility)

AND

(Sports OR sport* OR "sport for development" OR sport-for-development OR "sport based intervention*" OR "sport-based intervention*" OR "sport for change" OR "sport for peace" OR "sport for social*" OR "physical activity intervention*" OR "sport program*" OR "sport programme*" OR "sport project*")

AND (Adolescent OR Youth OR youth* OR adolescen* OR "young people" OR "young person*" OR "young adult*" OR teenager* OR "school age*" OR student* OR "secondary school*" OR "high school*")

AND

(afghan* OR africa* OR albania* OR algeria* OR angola* OR antigua* OR barbuda* OR argentin* OR armenia* OR aruba* OR azerbaijan* OR bahrain* OR bangladesh* OR bengal* OR bangal* OR barbados* OR barbadian* OR bajo OR bajans OR belarus* OR belorus* OR byelarus* OR byelorus* OR belize* OR benin* OR dahomey OR bhutan* OR bolivia* OR bosnia* OR herzegovin* OR botswan* OR batswan* OR bechuanaland* OR brazil* OR brasil* OR bulgaria* OR burkina* OR burkinese* OR "upper volta*" OR burundi* OR urundi* OR "cabo verde*" OR "cape verde*" OR cambodia* OR kampuchea* OR khmer* OR cameroon* OR cameroun* OR "ubangi shari*" OR chad* OR chile* OR china* OR chinese OR colombia* OR comoro* OR comore* OR comorian* OR mayotte* OR congo* OR zaire* OR "costa rica*" OR "cote d'ivoir*" OR "cote d'ivoir*" OR "cote divoir*" OR "cote d ivoir*" OR "ivory coast*" OR ivorian* OR croatia* OR cuba OR cuban OR cubans OR cuba's OR cyprus* OR cypriot* OR czech* OR djibouti* OR "french somaliland*" OR dominica* OR ecuador* OR egypt* OR "united arab republic*" OR "el salvador*" OR salvadoran* OR guinea* OR equatoguinea* OR eritrea* OR estonia* OR eswatini* OR swaziland* OR swazi* OR swati* OR ethiopia* OR fiji* OR gabon* OR gabonese* OR gabonaise* OR gambia* OR ((georgia OR georgian OR georgians) NOT (atlanta OR california OR florida)) OR ghana* OR gibraltar* OR greece* OR greek* OR grecian* OR grenada* OR grenadian* OR guam* OR guatemala* OR guyana* OR guiana* OR guyanese* OR haiti* OR hispaniola* OR hondura* OR hungary* OR hungarian* OR india* OR indonesia* OR iran* OR iraq* OR "isle of man*" OR jamaica* OR jordan* OR kazakh* OR kenya* OR karabati* OR korea* OR kosovo* OR kosova* OR kyrgyz* OR kirgiz* OR kirghiz* OR laos OR lao OR laotian* OR latvia* OR lebanon* OR lebanese* OR lesotho* OR lesothan* OR lesothonian* OR basutoland* OR mosotho* OR basotho* OR liberia* OR libya* OR jamahiriya* OR lithuania* OR macedonia* OR madagasca* OR malagasy* OR malawi* OR nyasaland* OR malaysia* OR "malay* federation" OR maldives* OR maldivian* OR "indian ocean" OR mali OR malian* OR mali's OR malta OR maltese* OR malta's OR micronesia* OR marshallese* OR kiribati* OR "marshall island*" OR nauru OR nauran OR nauruans OR naurian's OR mariana OR marianas OR palau OR paluan* OR tuvalu* OR mauritania* OR mauritan* OR mauritius* OR mexico* OR mexican* OR moldova* OR moldovia* OR mongol* OR montenegr* OR morocco* OR moroccan* OR ifni OR mozambique* OR mozambican* OR myanmar* OR burma* OR burmese OR namibia* OR nepal* OR "new caledonia*" OR "netherlands antill*" OR nicaragua* OR niger* OR oman OR omani OR omanis OR oman's OR pakistan* OR palestin* OR gaza* OR "west bank*" OR panama* OR paraguay* OR peru OR peruvian* OR peru's OR philippine* OR philipine* OR philippine* OR philippine* OR filipino* OR filipina* OR poland* OR polish OR pole OR poles OR portugal* OR portuguese OR "puerto ric*" OR romania* OR russia* OR ussr* OR soviet* OR rwanda* OR rwandese

OR ruanda* OR ruandese OR samoa* OR "navigator island*" OR "pacific island*" OR polynesia* OR "sao tome and principe*" OR "sao tomean*" OR santomean* OR "saudi arabia*" OR saudi OR saudis OR senegal* OR serbia* OR seychell* OR "sierra leone*" OR slovak* OR sloven* OR melanesia* OR "solomon island*" OR "norfolk island*" OR somali* OR "sri lanka*" OR ceylon* OR "saint kitts and nevis*" OR "st kitts and nevis*" OR kittian* OR nevisian* OR "saint lucia*" OR "st lucia*" OR "saint vincent*" OR "st vincent*" OR vincentian* OR grenadine* OR sudan* OR surinam* OR syria* OR tajik* OR tadjik* OR tadzhik* OR tanzania* OR tanganyika* OR thai* OR "timor leste*" OR "east timor*" OR timorese* OR togo OR togoles* OR togo's OR tonga* OR trinidad* OR tobago* OR tunisia* OR turkiy* OR turkey* OR turk OR turks OR turkish OR turkmen* OR uganda* OR ukrain* OR uruguay* OR uzbek* OR vanuatu* OR "new hebrides*" OR venezuela* OR vietnam* OR "viet nam*" OR yemen* OR yugoslav* OR zambia* OR zimbabwe* OR rhodesia* OR "arab* countr*" OR "middle east*" OR "global south" OR sahara* OR subsahara* OR magreb* OR maghrib* OR "west indies*" OR caribbean* OR "central america*" OR "latin america*" OR "south america*" OR "central asia*" OR "north asia*" OR "northern asia*" OR "southeastern asia*" OR "south eastern asia*" OR "southeast asia*" OR "south east asia*" OR "west asia*" OR "western asia*" OR "east europe*" OR "eastern europe*" OR "developing countr*" OR "developing nation*" OR "developing population*" OR "developing world" OR "less developed countr*" OR "less developed nation*" OR "less developed world" OR "lesser developed countr*" OR "lesser developed nation*" OR "lesser developed world" OR "under developed countr*" OR "under developed nation*" OR "under developed world" OR "underdeveloped countr*" OR "underdeveloped nation*" OR "underdeveloped world" OR "middle income countr*" OR "middle income nation*" OR "middle income population*" OR "low income countr*" OR "low income nation*" OR "low income population*" OR "lower income countr*" OR "lower income nation*" OR "lower income population*" OR "underserved countr*" OR "underserved nation*" OR "underserved population*" OR "under served population*" OR "under served nation*" OR "under served population*" OR "deprived countr*" OR "deprived population*" OR "high burden countr*" OR "high burden nation*" OR "countdown countr*" OR "countdown nation*" OR "poor countr*" OR "poor nation*" OR "poor population*" OR "poor world" OR "poorer countr*" OR "poorer nation*" OR "poorer population*" OR "poorer world" OR "developing econom*" OR "less developed econom*" OR "underdeveloped econom*" OR "under developed econom*" OR "middle income econom*" OR "low income econom*" OR "lower income econom*" OR "low gdp" OR "low gnp" OR "low gross domestic" OR "low gross national" OR "lower gdp" OR "lower gnp" OR "lower gross domestic" OR "lower gross national" OR lmic OR lmic OR "third world" OR "lami countr*" OR "transitional countr*" OR "emerging econom*" OR "emerging nation*")

8.2.3 Google Scholar

"sport for development" OR "sport-based intervention" "soft skills" OR "life skills" OR "employability skills" youth OR adolescents "low- and middle-income" OR "developing countries" OR "Global South" OR Africa OR Asia

8.3 EXTRACTION TABLE

Study Identification: Author(s), Title and Country	Study Design	Sample (n; % female; mean age)	Intervention Type & Duration	Soft Skills Measured (SSC Framework)	Main Quantitative Findings	Measurement Tool(s) (Validated Y/N)	MMAT Key Weakness
1. Albuquerque et al. (2021): Positive development of young futsal players is influenced by the coach's method and leadership profile. Brazil	Cross-sectional correlational study	n=541 youth 13.86 yrs gender mixed 82.1% male	School-based (public sport prog.) after-school sport programme, 1 Year (2018)	Positive: TEAM, SELF, PROB Null: none reported Not assessed: LEAD, COMM, ADAPT, CRIT	Coaches using small-sided games combined with democratic leadership resulted in significantly higher goal setting scores (OR = 1.35, $p < 0.05$) and personal and social skills ($p < 0.05$). Cross-sectional design; no control group; findings reflect associations only.	The Leadership Scale of Sports (LSS) Portuguese version of the Youth Experience Survey for Sport (YES-S) Validated: YES	4/5 Response rateNot reported cross-sectional design
2. Bayyat et al. (2016): Life skills acquired in relation to teaching methods used through swimming context. Jordan	Cross-sectional quantitative (survey).	n=142 students 18-24 yrs (estimated, not reported)	University-Based PE (swimming) 12 weeks	Positive: COMM, TEAM, SELF, PROB Null: none reported Not assessed: LEAD, ADAPT, CRIT	Significant positive correlation between participatory teaching methods and life skills scores ($p < 0.05$). Communication skills and self-confidence were the most strongly acquired competencies, followed by teamwork and problem-solving. Custom unvalidated scale limits comparability.	Custom 'Life Skills through Swimming Context Scale' (author-developed). Validated: partialy	3/5 No control group; unvalidated scale
3. Beaman et al. (2021): Stay in the game: A randomized controlled trial of a sports and life skills program for vulnerable youth in Liberia. Liberia	RCT (gold standard)	n=1,200 52% female 15-25 Mean 21 yrs	NGO-led (Mercy Corps) 6 months 16 Session, 3 hours, introduction, mostly football and handball	Positive: none Null: SELF, TEAM, COMM, ADAPT Not assessed: LEAD, PROB, CRIT	No statistically significant improvement in any measured soft skill outcome (SELF, TEAM, COMM, ADAPT all $p > 0.05$). Significant positive effect on labour force participation of +0.12 SD ($p < 0.05$), with effects strongest among the most disadvantaged participants. Only large-scale RCT in the review; null soft skill result is the most methodologically robust finding in the evidence base.	Modified Cantril Scale/ Partly established Rosenberg Self-Esteem Scale/ established Rotter-style Locus of Control Index/ established concept Aggression index based on 7 scenario questions partially validated Risky behaviour index based on 6 questions/ partially validated Psychosocial Index (PSI) Composite index / partial	4/5 Soft skill scales unvalidated; short follow-up

Study Identification: Author(s), Title and Country	Study Design	Sample (n; % female; mean age)	Intervention Type & Duration	Soft Skills Measured (SSC Framework)	Main Quantitative Findings	Measurement Tool(s) (Validated Y/N)	MMAT Key Weakness
4. Burnett (2022): Employability pathways in a sport-for- development programme for girls in a Sub-Saharan impoverished setting. South Africa	Mixed-methods programme evaluation	n=255 girls/ young women ~ 13-14yrs	NGO-led (<i>Let's Lead, Let's</i> <i>Coach</i> SfD prog.) multi-year	Positive: SELF, ADAPT Null: not assessed Not assessed: COMM, TEAM, PROB, CRIT, LEAD	Resilience scores increased across programme cohorts in a positive trajectory toward employability outcomes (descriptive statistics). No control group; qualitative component dominant; quantitative evidence limited to descriptive resilience data across cohorts.	Brief Resilience Scale (BRS); custom employability items Validated: Partial	3/5 Qualitative dominant; no control
5. Chen et al. (2026): Team cohesion and mental resilience among vocational college students in ultimate frisbee courses. China	Cross-sectional correlational study (mediation/SEM)	n=390 students vocational college 18.57 ± 0.59 years. 69% Male	University PE (ultimate frisbee) one semester	Positive: TEAM + resilience related ADAPT Null: none reported Not assessed: COMM, PROB, LEAD, SELF, CRIT	Team cohesion significantly predicted mental resilience ($\beta = 0.279$, $p < 0.05$). Structural equation model explained 46.4% of variance in resilience outcomes. Basic psychological needs and exercise motivation confirmed as significant mediators of the team cohesion to resilience pathway. Cross- sectional; no causal inference possible.	Group Environment Questionnaire Basic Psychological Needs in Exercise Scale Behavioural Regulation in Exercise Questionnaire-3 Brief Resilience Scale Validated: YES	4/5 Cross-sectional; no causal inference
6. Freire et al. (2024): Coach-athlete relationships and life skills development among Brazilian handball players: A prospective study. Brazil	Prospective quantitative (longitudinal)	n=78 male handball players Mage = 16.17yrs	Sport club (handball) 1 year	Positive: COMM, SELF, LEAD, PROB Null: TEAM Not assessed: ADAPT, CRIT	Seven of eight LSSS subscales showed statistically significant improvement over one competitive season ($p < 0.05$), with effect sizes ranging from small to large ($ES = 0.05$ to 0.18 for individual subscales; $ES = 0.96$ for total life skills). Null result for teamwork subscale specifically. Prospective longitudinal design; no control group.	LSSS (8 subscales); CART-Q Validated: YES	4/5 No control group; self-report only
7. Freire et al. (2025): Motivation as a Mediator of the Associations Between the Coach-Athlete Relationship and Athlete's Life Skills Development. Brazil	Quantitative mediation cross-sectional	N=724 48% female athletes Mage=14.57	Sport club (various sports) same sample as Freire 2025 B	Positive: COMM, TEAM, SELF, LEAD, PROB Null: none reported Not assessed: ADAPT, CRIT	Motivation significantly mediated the relationship between coach-athlete relationship quality and life skills development (indirect effect $\beta = 0.22$, $p < 0.05$). Autonomy-supportive coaching directly and significantly predicted LSSS outcomes across all measured subscales. Cross-sectional mediation design; overlapping sample with Freire 2025b.	LSSS, CART-Q; motivation scale, Behavioral Regulation in Sport Questionnaire Validated: YES	3/5 Cross-sectional; mediation only

Study Identification: Author(s), Title and Country	Study Design	Sample (n; % female; mean age)	Intervention Type & Duration	Soft Skills Measured (SSC Framework)	Main Quantitative Findings	Measurement Tool(s) (Validated Y/N)	MMAT Key Weakness
8. Freire et al. (2025): The coach-athlete relationship as a mediator of the relationships between coach–autonomy support and athlete’s life skills development. Brazil	Quantitative mediation cross-sectional	N=724 48% female athletes Mage=14.57	Sport club (various sports) same sample as Freire 2025 A	Positive: COMM, TEAM, SELF, LEAD, PROB Null: none reported Not assessed: ADAPT, CRIT	Coach-athlete relationship quality significantly mediated the pathway from autonomy-supportive coaching to life skills development (indirect effect $\beta = 0.19$, $p < 0.05$). Direct autonomy support effects also significant across LSSS subscales. Cross-sectional mediation design; same sample as Freire 2025a.	LSSS; CART-Q; autonomy Perceived Autonomy Support: Exercise Climate Questionnaire (PASECQ) Validated: YES	3/5 Cross-sectional; overlapping sample
9. Harun & Salamuddin (2010): Cultivating personality development through outdoor education programme: The Malaysia Experience. Malaysia	Quasi-experimental pre-post control group study	n=671 students 18-24 yrs 62.9% females	School outdoor education prog. DurationNot reported	Positive: TEAM, LEAD, ADAPT, SELF Null: none reported Not assessed: COMM, PROB, CRIT	Significant improvements in cooperation ($t = 24.71$, $p < 0.05$), leadership ability ($t = 42.79$, $p < 0.05$), self-confidence ($t = 37.07$, $p < 0.05$), and coping with change ($t = 43.67$, $p < 0.05$) relative to control group. Programme accounted for 34% of variance in cooperation, 53% in self-confidence, 60% in leadership ability, and 61% in coping with change. Quasi-experimental with control group; partial instrument validation limits comparability.	Life Effectiveness Questionnaire (LEQ; Neill, 2002). Validated: Partial.	3/5 partial validation, unclear intervention implementation, representativeness unclear.
10. Liu et al. (2022): The Moderating Role of Sociability and Social Connection for the Relationship between Soccer Participation and Teamwork Ability among Chinese College Students. China	Cross-sectional comparative study	n=432 college students 19.79 yrs	University sport (soccer) regular participation	Positive: TEAM Null: none reported Not assessed: COMM, PROB, LEAD, SELF, ADAPT, CRIT	Soccer participation significantly and positively predicted teamwork ability ($\beta = 0.31$, $p < 0.05$). Social connection negatively moderated the participation-teamwork relationship ($\beta = -0.18$, $p < 0.05$), indicating that higher existing social connection reduced the marginal teamwork gain from sport participation. Cross-sectional; university students only.	Teamwork is measured using Team–Q The Personal Sociability and Connections Scale (PeSCS) Validated: YES	4/5 Cross-sectional; university students only
11. (Mandigo et al., 2018): The impact of the Hoodlinks Programme on developing life skills and preventing youth violence in Guatemala City	Mixed-methods programme evaluation	n=116 31% female Mage 13 yrs	NGO-led (Hoodlinks, Community and various sports) multi-year	Positive: SELF, ADAPT, COMM, TEAM, violence prevention/social integration indirect Null: none reported Not assessed: PROB, LEAD, CRIT	Significant improvements in life skills outcomes and reductions in risk behaviours following programme participation ($p < 0.05$). Peer cohesion increased significantly across the programme period. Mixed-methods design; quantitative component confirms directional gains across SELF, ADAPT, COMM, and TEAM categories.	Life Skill Assessment Scale Aggression, caring and cooperation scale. Life skills scale Youth Experience Survey – Sport. Validated: yes	5/5

Study Identification: Author(s), Title and Country	Study Design	Sample (n; % female; mean age)	Intervention Type & Duration	Soft Skills Measured (SSC Framework)	Main Quantitative Findings	Measurement Tool(s) (Validated Y/N)	MMAT Key Weakness
12. Maleté et al. (2022): Effects of a sport-based positive youth development program on youth life skills and entrepreneurial mindsets. Botswana, Ghana, Tanzania	Quasi- experimental multinational intervention study	n=146 Mage 15.9 yrs 48.6% female	NGO-led SFD (AAP programme) 3-week, 2 Groups, one Life-Skill focus, one just sport-only	Positive: COMM, TEAM, SELF, LEAD, PROB, ADAPT entrepreneurial mindset interpreted as adaptability Null: none reported Not assessed: CRIT	Significant life skills gains across both intervention and sport-only comparison groups (ANOVA, $p < 0.05$ across LSSS subscales). Entrepreneurial mindset improvement significant in intervention group only ($p < 0.05$), not in sport-only group. Strongest quasi-experimental evidence from sub-Saharan African SFD context in the review. Small sample ($n = 146$) and short three-week duration are noted limitations.	LSSS; GET v2 (entrepreneurial) Validated: YES	5/5 small sample, short 3-week intervention, country heterogeneity.
13. Nyanyofio et al. (2024): Resilience and sustainability of entrepreneurial mindsets in Ghanaian youth: a five-year impact study of sports training programs. Ghana	Descriptive programme evaluation study	n=Not reported originally 18–30 yrs mixed gender	NGO-led SFD (AAP programme) 5-year follow-up	Positive: LEAD, SELF, ADAPT, PROB, TEAM Null: none reported Not assessed: COMM, CRIT	Sustained entrepreneurial mindsets, self-management gains, and career and academic progression reported at five- year follow-up via descriptive statistics and survey data. Only study in the review with long-term follow-up data. Low methodological quality (2/5); survivor bias and unreported sample size substantially limit conclusions. Findings are directionally suggestive only.	Adapted Skill Application Scale Validated: Partial	2/5 descriptive/survey follow-up, survivor bias, no comparison group
14. Ocansey et al. (2023): Promoting development of entrepreneurial skills of youth in Ghana through a structured sport intervention program. Ghana	Quasi- experimental pre-post control group study	n= 29 youth 14–22 yrs 41% female	2x 3 days camps Entrepreneurship Lesson Life Skill Lesson Sport Lesson	Positive: LEAD, SELF, ADAPT, TEAM, Prob Null: none reported Not assessed: COMM, CRIT	Significant improvements in entrepreneurial skills, problem-solving, leadership, goal setting, social skills, and initiative following intervention (t-test, $p < 0.05$). Very small sample ($n = 29$) and short two three-day camp format limit generalisability.	Youth Experience Survey for Sport (YES- S) Validated: YES	3/5 Short programme, Small intervention Group
15. Ouaddou & Kanbaai (2025): Developing life skills through physical education: social skills and teamwork in Moroccan secondary school students. Morocco	Cross-sectional survey study	n=150 students 14–20 yrs 51% male	School PE (handball) 12-session cycle 1 Month	Positive: TEAM, COMM Null: none reported Not assessed: PROB, LEAD, SELF, ADAPT, CRIT	Teamwork weighted mean score 3.62 (SD = 0.66); social skills weighted mean score 3.54 (SD = 0.74). Significant positive correlation between teamwork and social skills ($r = 0.43$, $p < 0.01$). Cross- sectional survey; single school sample; findings reflect associations only.	LSSS Validated: YES	4/5 single school self-report

Study Identification: Author(s), Title and Country	Study Design	Sample (n; % female; mean age)	Intervention Type & Duration	Soft Skills Measured (SSC Framework)	Main Quantitative Findings	Measurement Tool(s) (Validated Y/N)	MMAT Key Weakness
16. Ricketts et al. (2025): An investigation of coach autonomy support, life skills acquisition, and the five Cs among junior and senior secondary school athletes in Botswana. Botswana	Cross-sectional SEM study	n=300 athletes secondary school Mage 17.16 yrs Male 53.5%	School sport (various sports) regular season	Positive: COMM, TEAM, SELF, LEAD, PROB, ADAPT Five Cs partly overlap with adaptability Null: none reported Not assessed: CRIT	Coach autonomy support significantly predicted life skills acquisition across LSSS subscales ($\beta = 0.45$, $p < 0.001$). Five Cs of positive youth development positively and significantly related to LSSS total scores ($\beta = 0.38$, $p < 0.001$). Cross-sectional SEM design; associations only; no control group.	LSSS, Sport Climate Questionnaire (SCQ; Center for Self- Determination Theory The 34-item Positive Youth Development Short Form (PYD-SF) Validated: YES	5/5
17. Vahdani et al. (2025): An Iranian study of life skills development in youth sport based on self-determination theory. Iran	Cross-sectional correlational study	n=317 university students Mage=22.3 yrs 70% female	University sport (various) regular partici- pation	Positive: COMM, TEAM, SELF, LEAD, PROB Null: none reported Not assessed: ADAPT, CRIT	Satisfaction of all three basic psychological needs (autonomy, competence, and relatedness) significantly predicted all eight LSSS subscales (β range 0.18 to 0.42, $p < 0.05$ across subscales). Autonomy satisfaction emerged as the strongest individual predictor. Cross-sectional correlational design; 70% female sample limits generalisability across gender.	LSSS; BPNS scale Validated: YES	4/5 70% female cross-sectional/self- report
18. Wang et al. (2024): Enhancing career adaptability in college students: a Tai Chi- based sports intervention study. China	Randomized controlled intervention study	n=70 students senior college Mage 20.9 yrs	University PE (Tai Chi, PYD- based) 8 weeks	Positive: ADAPT, SELF career adaptability overlaps with self- management Null: none reported Not assessed: COMM, TEAM, PROB, LEAD, CRIT	Significant improvements in career adaptability (ADAPT) and self- management (SELF) in intervention group relative to control group following eight-week Tai Chi intervention ($F = 18.4$, $p < 0.001$, $\eta^2 = 0.21$). Basic psychological needs confirmed as significant mediator of the intervention effect. Only study in the review using a directly employability- relevant outcome measure (CAAS). Small sample ($n = 70$) and culture-specific intervention format limit transferability.	CAAS (career adapt- ability); BPNS Validated: YES	4/5 Small n (70); culture-specific intervention

Study Identification: Author(s), Title and Country	Study Design	Sample (n; % female; mean age)	Intervention Type & Duration	Soft Skills Measured (SSC Framework)	Main Quantitative Findings	Measurement Tool(s) (Validated Y/N)	MMAT Key Weakness
19. Woodcock et al. (2012): Quantitative evidence for the benefits of Moving the Goalposts, a Sport for Development project in rural Kenya. Kenya	Cross-sectional programme evaluation study	n=333 members 10-25 yrs Mage 14.3 yrs 10% between 10 and 13 years female only	NGO-led SFD (Moving the Goal- posts, football) membership-based	Positive: SELF, COMM, ADAPT Null: none reported Not assessed: TEAM, PROB, CRIT, LEAD	Membership duration significantly predicted life skills gains across self- management (SELF), communication (COMM), and adaptability (ADAPT) domains (regression β significant, $p < 0.05$ across domains). Leadership gains were primarily associated with participant age rather than programme exposure duration. Dose-response pattern provides indirect support for cumulative programme effect. Custom unvalidated measurement tool and female-only sample are noted limitations.	Custom M&E toolkit (MTG-developed) Validated: Partial	3/5 Custom unvalidated tool; female only
20. Xia et al. (2025): Fostering teamwork skills through PBL volleyball courses: A social psychological study of Chinese vocational college students. China	Quasi- experimental controlled intervention study	n= 81 vocational college students 18–22 yrs (estimated) 41% male	University PE (PBL volleyball) 12 Weeks	Positive: TEAM, COMM Null: none reported Not assessed: PROB, LEAD, SELF, ADAPT, CRIT	Problem-based learning volleyball course significantly predicted teamwork skills relative to control group ($\beta = 0.44$, $p < 0.001$). Social interaction confirmed as significant mediator of the intervention effect ($\beta = 0.29$, $p < 0.05$). Experimental group improved significantly more than control group across all teamwork dimensions. Quasi- experimental with control group; small sample (n = 81).	The College Students' Teamwork Skills Scale Validated: YES	5/5 Small sample
21. Xue et al. (2026): The impact of empowering motivational climate in physical education on secondary school students' life skills: a self-system model of motivational development. China	Cross-sectional SEM study	n= n=549 263 male/286 female, M=15.17 yrs	School PE (motivational climate intervent.) one semester	Positive: COMM, TEAM, SELF, LEAD, PROB Null: none reported Not assessed: ADAPT, CRIT	Empowering motivational climate in PE significantly predicted life skills across COMM, TEAM, SELF, LEAD, PROB) ($\beta = 0.51$, $p < 0.001$). Self-determination mediated the full model ($R^2 = 0.43$). Cross-sectional SEM design; no control group; mediation model does not establish causality.	LSSS, the Event- Related Rumination Scale Physical Education Empowering Motivational Climate Scale The Physical Education Engagement Scale Validated: YES	4/5 cross-sectional, no control, mediation does not prove causality.

Table 9: Data extraction table for all 21 included studies (Maurer, 2026)

8.4 MIXED METHODS APPRAISAL TOOL (MMAT), VERSION 2018 (ADAPTED FROM HONG ET AL., 2018).

Category of study designs / Study	Methodological quality criteria	Responses			
		Yes	No	Can't tell	Comments
1. Qualitative	No studies				
Not included	1.1. Is the qualitative approach appropriate to answer the research question?				
	1.2. Are the qualitative data collection methods adequate to address the research question?				
	1.3. Are the findings adequately derived from the data?				
	1.4. Is the interpretation of results sufficiently substantiated by data?				
	1.5. Is there coherence between qualitative data sources, collection, analysis and interpretation?				
2. Quantitative randomized controlled trials					
Beaman et al. (2021)	2.1. Is randomization appropriately performed?	x			
	2.2. Are the groups comparable at baseline?	x			
	2.3. Are there complete outcome data?	x			
	2.4. Are outcome assessors blinded to the intervention provided?			x	<i>Not reported</i>
	2.5 Did the participants adhere to the assigned intervention?	x			
3. Quantitative non-randomized					
Freire et al. (2024)	3.1. Are the participants representative of the target population?	x			
	3.2. Are measurements appropriate regarding both the outcome and intervention (or exposure)?	x			
	3.3. Are there complete outcome data?	x			
	3.4. Are the confounders accounted for in the design and analysis?		x		<i>No control group</i>

Category of study designs / Study	Methodological quality criteria	Responses			
		Yes	No	Can't tell	Comments
	3.5. During the study period, is the intervention administered (or exposure occurred) as intended?	x			
Harun & Salamuddin (2010)	3.1. Are the participants representative of the target population?			x	Higher education PE students in Malaysia
	3.2. Are measurements appropriate regarding both the outcome and intervention (or exposure)?	x			
	3.3. Are there complete outcome data?	x			
	3.4. Are the confounders accounted for in the design and analysis?	x			
	3.5. During the study period, is the intervention administered (or exposure occurred) as intended?			x	Not described
Malete et al. (2022)	3.1. Are the participants representative of the target population?	x			
	3.2. Are measurements appropriate regarding both the outcome and intervention (or exposure)?	x			
	3.3. Are there complete outcome data?	x			
	3.4. Are the confounders accounted for in the design and analysis?	x			
	3.5. During the study period, is the intervention administered (or exposure occurred) as intended?	x			
Ocansey et al. (2023)	3.1. Are the participants representative of the target population?			x	Very small sample

Category of study designs / Study	Methodological quality criteria	Responses			
		Yes	No	Can't tell	Comments
	3.2. Are measurements appropriate regarding both the outcome and intervention (or exposure)?	x			
	3.3. Are there complete outcome data?	x			
	3.4. Are the confounders accounted for in the design and analysis?			x	<i>Very small sample</i>
	3.5. During the study period, is the intervention administered (or exposure occurred) as intended?	x			
Wang et al. (2024)	3.1. Are the participants representative of the target population?			x	<i>Small sample</i>
	3.2. Are measurements appropriate regarding both the outcome and intervention (or exposure)?	x			
	3.3. Are there complete outcome data?	x			
	3.4. Are the confounders accounted for in the design and analysis?	x			
	3.5. During the study period, is the intervention administered (or exposure occurred) as intended?	x			
4. Quantitative descriptive					
Albuquerque et al. (2021) — Brazil	4.1. Is the sampling strategy relevant to address the research question?	x			
	4.2. Is the sample representative of the target population?	x			
	4.3. Are the measurements appropriate?	x			
	4.4. Is the risk of nonresponse bias low?			x	
	4.5. Is the statistical analysis appropriate to answer the research question?	x			
Bayyat et al. (2016) — Jordan	4.1. Is the sampling strategy relevant to address the research question?	x			
	4.2. Is the sample representative of the target population?	x			

Category of study designs / Study	Methodological quality criteria	Responses			
		Yes	No	Can't tell	Comments
	4.3. Are the measurements appropriate?		x		<i>Not validated</i>
	4.4. Is the risk of nonresponse bias low?			x	<i>142 of 236 participated, 40% not included, reasons not reported</i>
	4.5. Is the statistical analysis appropriate to answer the research question?	x			
Chen et al. (2026) — China					
	4.1. Is the sampling strategy relevant to address the research question?	X			
	4.2. Is the sample representative of the target population?			x	<i>generalisability to broader Chinese youth unclear</i>
	4.3. Are the measurements appropriate?	X			
	4.4. Is the risk of nonresponse bias low?	X			
	4.5. Is the statistical analysis appropriate to answer the research question?	X			
Freire et al. (2025a)					
	4.1. Is the sampling strategy relevant to address the research question?	x			
	4.2. Is the sample representative of the target population?	x			
	4.3. Are the measurements appropriate?	x			

Category of study designs / Study	Methodological quality criteria	Responses			
		Yes	No	Can't tell	Comments
	4.4. Is the risk of nonresponse bias low?	x			
	4.5. Is the statistical analysis appropriate to answer the research question?	x			
Freire et al. (2025b)	4.1. Is the sampling strategy relevant to address the research question?	x			
	4.2. Is the sample representative of the target population?	x			
	4.3. Are the measurements appropriate?	x			
	4.4. Is the risk of nonresponse bias low?	x			
	4.5. Is the statistical analysis appropriate to answer the research question?	x			
Liu et al. (2022)	4.1. Is the sampling strategy relevant to address the research question?	x			
	4.2. Is the sample representative of the target population?	x			
	4.3. Are the measurements appropriate?	x			
	4.4. Is the risk of nonresponse bias low?			x	<i>Not reported</i>
	4.5. Is the statistical analysis appropriate to answer the research question?	x			
Nyanyofio et al. (2024)	4.1. Is the sampling strategy relevant to address the research question?	x			
	4.2. Is the sample representative of the target population?			x	<i>N = not reported</i>
	4.3. Are the measurements appropriate?			x	<i>Not clear</i>
	4.4. Is the risk of nonresponse bias low?		x		<i>Only traceable alumni included</i>
	4.5. Is the statistical analysis appropriate to answer the research question?	x			

Category of study designs / Study	Methodological quality criteria	Responses			
		Yes	No	Can't tell	Comments
Ouaddou & Kanbaai (2025)	4.1. Is the sampling strategy relevant to address the research question?	x			
	4.2. Is the sample representative of the target population?		x		<i>Single school</i>
	4.3. Are the measurements appropriate?	x			
	4.4. Is the risk of nonresponse bias low?	x			
	4.5. Is the statistical analysis appropriate to answer the research question?	x			
Ricketts et al. (2025)	4.1. Is the sampling strategy relevant to address the research question?	x			
	4.2. Is the sample representative of the target population?	x			
	4.3. Are the measurements appropriate?	x			
	4.4. Is the risk of nonresponse bias low?	x			
	4.5. Is the statistical analysis appropriate to answer the research question?	x			
Vahdani et al. (2025)	4.1. Is the sampling strategy relevant to address the research question?	x			
	4.2. Is the sample representative of the target population?	x			
	4.3. Are the measurements appropriate?	x			
	4.4. Is the risk of nonresponse bias low?			x	<i>70% female</i>
	4.5. Is the statistical analysis appropriate to answer the research question?	x			
Woodcock et al. (2012)	4.1. Is the sampling strategy relevant to address the research question?	x			
	4.2. Is the sample representative of the target population?	x			
	4.3. Are the measurements appropriate?			x	<i>Not validated</i>

Category of study designs / Study	Methodological quality criteria	Responses			
		Yes	No	Can't tell	Comments
	4.4. Is the risk of nonresponse bias low?			x	<i>Only members and recruited ones</i>
	4.5. Is the statistical analysis appropriate to answer the research question?	x			
Xia et al. (2025)	4.1. Is the sampling strategy relevant to address the research question?	x			
	4.2. Is the sample representative of the target population?	x			
	4.3. Are the measurements appropriate?	x			
	4.4. Is the risk of nonresponse bias low?	x			
	4.5. Is the statistical analysis appropriate to answer the research question?	x			
Xue et al (2026)	4.1. Is the sampling strategy relevant to address the research question?	x			
	4.2. Is the sample representative of the target population?	x			
	4.3. Are the measurements appropriate?	x			
	4.4. Is the risk of nonresponse bias low?		x		<i>No control group</i>
	4.5. Is the statistical analysis appropriate to answer the research question?	x			
5. Mixed methods					
Burnett (2022) — South Africa	5.1. Is there an adequate rationale for using a mixed methods design to address the research question?	x			
	5.2. Are the different components of the study effectively integrated to answer the research question?	x			
	5.3. Are the outputs of the integration of qualitative and quantitative components adequately interpreted?	x			

Category of study designs / Study	Methodological quality criteria	Responses			
		Yes	No	Can't tell	Comments
	5.4. Are divergences and inconsistencies between quantitative and qualitative results adequately addressed?			x	<i>No explicit discussion of divergences reported</i>
	5.5. Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?	x			
Mandigo et al. (2018)	5.1. Is there an adequate rationale for using a mixed methods design to address the research question?	x			
	5.2. Are the different components of the study effectively integrated to answer the research question?	x			
	5.3. Are the outputs of the integration of qualitative and quantitative components adequately interpreted?	x			
	5.4. Are divergences and inconsistencies between quantitative and qualitative results adequately addressed?	x			
	5.5. Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?	x			

Table 10: Mixed Methods Appraisal Tool quality assessment results for all 21 included studies adapted from Hong et al. (2018)

8.5 POSTER



Department of Sport, Exercise
and Health



Sport for Development Projects and their Impact on Soft Skills among Youth in Low- and Middle-Income Countries: A Systematic Review of Quantitative Evidence

Robin Maurer
Supervisor: Dr. Ivan Müller

1 | Background

Sport for Development (SFD) refers to the intentional use of sport to achieve non-sport outcomes such as education, social inclusion, health, and employability (Lamri & Lubart, 2023). Structured sport participation has been associated with the development of soft skills that are widely recognized as important for employability. Despite growing policy support and investment from organizations such as UNESCO and the IOC, evidence for the effectiveness of SFD programs remains predominantly qualitative (Schulenkorf et al., 2016), while the relationship between soft skill development and employability outcomes is rarely examined directly.

Research question: What quantitative evidence exists on the effectiveness of SFD projects in fostering employability-relevant soft skills among youth in low- and middle-income countries?

2 | Method

A systematic review following PRISMA 2020 guidelines was conducted across four databases: PubMed, Scopus, the Journal of Sport for Development, and Google Scholar. Studies were eligible if they employed quantitative or mixed-methods designs, were peer reviewed, conducted in LMICs, involved youth aged 13–24, reported measurable soft skill outcomes and were published within 2010–2026. Methodological quality was assessed using the Mixed Methods Appraisal Tool (MMAT, 2018). Findings were synthesised narratively using the Soft Skill Categories (SSC) framework including seven employability-relevant categories derived from contemporary labour market literature (Abdillah et al., 2023; Poláková et al., 2023; Rodriguez Martinez et al., 2021).

Soft Skill Categories (SSC):

- Self-Management & Responsibility
- Teamwork
- Leadership
- Communication Skills
- Problem-Solving
- Adaptability & Flexibility
- Critical Thinking

PRISMA 2020 Flow Diagram

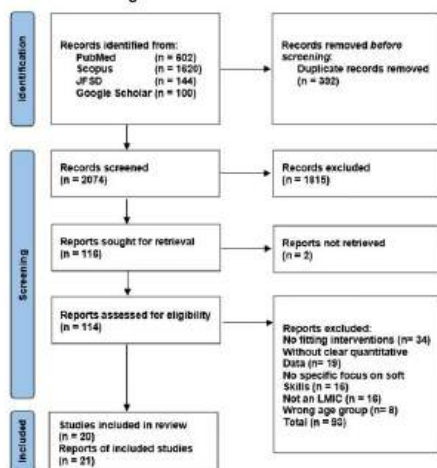


Fig 1: PRISMA 2020 flow diagram for the identification and screening of studies (adapted from Page et al., 2021).

3 | Results

Twenty-one studies involving approximately 6,500 participants across 14 countries were included. As shown in Figure 2, five SSC were measured with reasonable frequency, primarily via the Life Skills Scale for Sport (LSSS) (Cronin & Allen, 2017). Adaptability was inconsistently operationalised across eight studies. Critical thinking was entirely absent across all 21 studies, representing both a measurement and programme design gap. Twenty of 21 studies reported positive associations between sport participation and soft skill outcomes. However, as the chart shows, positive findings are concentrated in weaker designs. The only large-scale RCT (Beaman et al., 2021; n = 1,200; Liberia) found no significant soft skill improvement despite a significant positive labour market effect, which was the most methodologically robust finding in the review. A geographic skew is notable: five of 21 studies originate from Chinese PE contexts, structurally different from the NGO-led African SFD programmes that motivated this review, but were included due to fitting interventions. Across five studies in Brazil, Botswana, and Iran, coaching quality and autonomy-supportive facilitation consistently and significantly predicted soft skill outcomes.

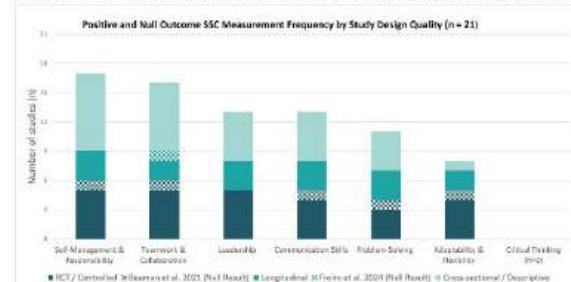


Fig 2: Studies could contribute to more than one SSC category; therefore, cumulative frequencies exceed the total number of included studies (n = 21). No included study assessed critical thinking.

4 | Discussion

- The quantitative evidence base is consistent in direction but fragile in quality
- The assumed causal chain from SFD participation → soft skill development → employment outcomes has not been empirically validated
- The only large-scale RCT (Beaman et al., 2021) returned null soft skill results but a positive labour market effect, challenging the assumed causal chain
- Coaching quality and autonomy-supportive facilitation emerged as the strongest determinants of soft skill outcomes across contexts
- Critical thinking remains entirely unmeasured across all 21 studies

Strength

- First systematic review focusing on the SSC and employability
- Inclusion of multiple LMIC regions and intervention contexts

Limitations

- Limited ability to establish causality
- Strong reliance on self-report measures
- Considerable heterogeneity in interventions and outcome measures
- Potential publication bias towards positive findings

Recommendations

- Conduct longitudinal RCTs measuring both soft skill and employment outcomes with validated instruments in sub-Saharan African and Latin American contexts
- Prioritise coach education and autonomy-supportive approaches as core programme components rather than implementation details
- Develop and validate instruments for critical thinking and adaptability in LMIC SFD contexts

Literature

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