

Global Research on Adaptive Sports for Persons with Disabilities: A Bibliometric Analysis of Trends, Networks, and Thematic Evolution

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Abstract

Adaptive sports promote physical health, social inclusion, and empowerment among persons with disabilities, yet the field's rapid growth has produced a fragmented literature whose intellectual structure and evolution remain insufficiently understood. To address this gap, this study mapped global research on adaptive sports for persons with disabilities through a bibliometric analysis of 277 Scopus-indexed journal articles published between 2015 and 2025. VOSviewer and Biblioshiny were used to examine publication growth, influential contributors and journals, collaboration networks, and thematic development. The literature grew at an annual rate of 30.43%, while the thematic emphasis shifted from performance-oriented research toward multidimensional perspectives centered on inclusion, participation, equity, quality of life, and well-being. By integrating evidence on growth, networks, and thematic change, this study clarifies the field's knowledge structure and identifies directions for researchers, practitioners, and policymakers seeking to advance inclusive sport research and practice.

Keywords: Adaptive sports; Disability sport; Persons with disabilities; Social inclusion; Physical activity; Bibliometric analysis; Sports rehabilitation.

1. Background

Sports and physical activity have long been recognized as essential components of human well-being, contributing to physical health, psychological resilience, and social engagement (Othman et al., 2019; Antonova & Yurko, 2023). For persons with disabilities, participation in sports holds even greater significance, as it not only enhances physical fitness but also fosters social inclusion, independence, and self-confidence (Karmakar et al., 2025; Rešek et al., 2023; Štangová et al., 2022; Moss et al., 2017). In this context, adaptive sports—defined as sports that are modified or specifically designed to accommodate individuals with physical, sensory, or intellectual disabilities—have emerged as a powerful tool for empowerment and inclusion (Bulut et al., 2024; Diaz et al., 2019).

Adaptive sports encompass a wide range of activities, including wheelchair basketball, adaptive swimming, Paralympic athletics, and inclusive recreational sports (Kiuppis, 2025) (Watts-Morgan, 2025). These activities provide opportunities for individuals with disabilities to engage in both competitive and non-competitive environments, thereby promoting equality and participation (Delouri et al., 2025). The global recognition of adaptive sports has been significantly enhanced by major international events such as the Paralympic Games, which have played a pivotal role in raising awareness, reducing stigma, and encouraging inclusive sporting practices worldwide (Diaz et al., 2019; Blauwet & Willick, 2012).

Over the past few decades, research on adaptive sports has expanded rapidly across multiple disciplines, including sports science, rehabilitation medicine, psychology, sociology, and disability studies. Scholars have explored diverse aspects such as physical rehabilitation outcomes, athletic performance, psychosocial benefits, accessibility challenges, and policy frameworks related to disability sports (Liu et al., 2022; Smith et al., 2016). This interdisciplinary growth reflects the increasing acknowledgment of adaptive sports as not merely recreational activities but as critical mechanisms for health promotion, social integration, and human rights advocacy (Kim et al., 2024; Mira et al., 2023).

Despite this expansion, the existing body of literature remains fragmented and dispersed across different disciplines and publication outlets (Khoo et al., 2018). As a result, it becomes challenging to identify key contributors, dominant research themes, collaborative networks, and emerging trends within the field. This lack of a consolidated understanding limits the ability of researchers, practitioners, and policymakers to effectively utilize existing knowledge for advancing inclusive sports practices and policies.

Bibliometric analysis has emerged as a valuable methodological approach for addressing such challenges (Donthu et al., 2021; Kumar, 2025). It provides a systematic and quantitative means of analyzing large volumes of scholarly data by examining publication patterns, citation networks, authorship collaborations, and keyword relationships (Passas, 2024). Through these techniques, bibliometric studies can map the intellectual structure of a research field, identify influential works and scholars, and uncover evolving thematic trends (Vaishya et al., 2025).

While several narrative and systematic reviews have examined the benefits and outcomes of sports participation for persons with disabilities, there is a noticeable lack of comprehensive bibliometric studies focusing specifically on adaptive sports research (Khoo et al., 2018). Existing studies often emphasize particular aspects such as rehabilitation or elite sports but do not provide a holistic overview of the field's development and structure (Rahman et al., 2025; Apriady et al., 2024). Consequently, there is a clear need for a systematic mapping of the scholarly landscape to better understand how adaptive sports research has evolved over time.

The present study addresses this gap by conducting a comprehensive bibliometric analysis of global research on adaptive sports for persons with disabilities (Liu et al., 2022). By analyzing publications retrieved from the Scopus database, the study examines trends in research productivity, identifies influential authors and journals, explores collaboration networks, and investigates thematic developments within the field. The use of advanced bibliometric tools

such as VOSviewer and Biblioshiny further enables visualization and interpretation of complex relationships within the data.

Ultimately, this study aims to provide a structured and evidence-based overview of adaptive sports research, contributing to a deeper understanding of its intellectual foundations and future directions. By doing so, it supports the ongoing efforts to promote inclusive sports environments and enhance the quality of life for persons with disabilities.

Need and Significance of the Study

The growing global emphasis on inclusion, equality, and human rights has increased the importance of adaptive sports as a means of empowering persons with disabilities (Blauwet & Willick, 2012). Despite the rapid expansion of research in this area, the literature remains scattered across various disciplines, making it difficult to gain a comprehensive understanding of the field (Shapiro & Pitts, 2014). This fragmentation highlights the need for a systematic and integrative approach to analyze existing research and identify key trends, gaps, and opportunities.

One of the primary needs of this study is to consolidate the diverse body of knowledge related to adaptive sports into a coherent framework (Misener & Darcy, 2014). Without such synthesis, researchers may face challenges in identifying influential studies, understanding collaboration patterns, and recognizing emerging research areas (Liu et al., 2022). A bibliometric analysis addresses this issue by providing quantitative insights into publication trends, citation impact, and thematic evolution, thereby enabling a clearer understanding of the research landscape.

The study is also significant in identifying leading contributors, including authors, institutions, and countries that are actively shaping the field. Such information is valuable for fostering collaboration, guiding future research partnerships, and promoting knowledge exchange across regions. Additionally, by highlighting dominant journals and publication outlets, the study assists researchers in identifying appropriate platforms for disseminating their work (de Oliveira et al., 2019).

From a practical perspective, the findings of this study have important implications for policymakers, sports organizations, and rehabilitation professionals. Understanding the evolution and focus areas of adaptive sports research can inform the development of inclusive sports policies, improve accessibility to sports facilities, and support the design of effective intervention programs for persons with disabilities (Pisà-Canyelles et al., 2023; Liu et al., 2022).

Furthermore, the study contributes to advancing academic knowledge by identifying emerging themes such as inclusive participation, rehabilitation through sports, and quality of life

improvements. These insights can guide future research directions and encourage interdisciplinary approaches to address complex challenges in adaptive sports (Kurniawan & Samudro, 2024).

In essence, the significance of this study lies in its ability to provide a comprehensive and structured overview of adaptive sports research. By mapping the intellectual landscape of the field, it not only enhances scholarly understanding but also supports evidence-based decision-making aimed at promoting inclusion, empowerment, and well-being for persons with disabilities.

2. Objectives of the Study

The study aims to achieve the following objectives:

1. To analyze the growth and distribution of global publications related to adaptive sports for persons with disabilities.
2. To identify the most influential authors, journals, institutions, and countries contributing to adaptive sports research.
3. To examine citation patterns and intellectual structures through citation and co-citation analysis.
4. To explore collaborative research networks among scholars and institutions through co-authorship analysis.
5. To identify dominant research themes and emerging topics through keyword co-occurrence and thematic mapping.
6. To identify the thematic evolution of key terms.

3. Research Questions

The study addresses the following research questions:

1. RQ1: What are the publication trends in research related to adaptive sports for persons with disabilities?
2. RQ2: Which authors, institutions, journals, and countries contribute most significantly to this research field?
3. RQ3: What patterns of collaboration exist among researchers studying adaptive sports?
4. RQ4: What are the dominant thematic clusters in adaptive sports research?
5. RQ5: What emerging research topics and future directions can be identified through bibliometric analysis?

4. Research Methodology

4.1 Research Design

This study employs a bibliometric research design to systematically and quantitatively examine scholarly literature on adaptive sports for persons with disabilities. Bibliometric approaches facilitate a structured evaluation of scientific output by enabling the analysis of publication trends, citation dynamics, collaborative structures, and thematic developments, thereby offering a comprehensive understanding of the intellectual landscape of the field.

4.2 Data Source

The dataset for this study was extracted from the Scopus database, widely recognized as one of the most extensive and authoritative repositories of peer-reviewed academic literature. Its broad disciplinary coverage and robust indexing standards ensure reliability and comprehensiveness in bibliometric investigation.

4.3 Search Strategy

A structured Boolean search strategy was formulated to retrieve relevant publications. The query integrates multiple keyword clusters related to adaptive sports, disability categories, and physical activity domains to ensure both precision and inclusiveness in data retrieval.

Search strings include:

(TITLE-ABS-KEY ("adaptive sport*" OR "adapted sport*" OR "disability sport*" OR "para sport*" OR "parasport*" OR "paralympic sport*" OR "inclusive sport*" OR "adapted physical activit*" OR "adaptive physical activit*" OR "disability athletics" OR "wheelchair sport*" OR "wheelchair basketball" OR "wheelchair rugby" OR "wheelchair tennis" OR "adaptive recreation" OR "adaptive exercise" OR "therapeutic sport*" OR "sport participation"))

AND

(TITLE-ABS-KEY (disabilit* OR "physical disabilit*" OR "intellectual disabilit*" OR "developmental disabilit*" OR "learning disabilit*" OR "cognitive disabilit*" OR "visual impairment*" OR blindness OR "hearing impairment*" OR deaf* OR "motor disabilit*" OR "mobility impairment*" OR "cerebral palsy" OR "down syndrome" OR "spinal cord injury" OR "amputation" OR "multiple disabilit*" OR "neurodevelopmental disorder*" OR autism OR "autism spectrum disorder" OR ASD))

AND

(TITLE-ABS-KEY (sport* OR "physical activit*" OR exercise

OR athletics OR recreation OR training
OR competition OR fitness OR rehabilitation))

STAGE	DESCRIPTION	RECORDS (N)
IDENTIFICATION	Records identified from Scopus (core collection)	3241
	Duplicate records removed	1
SCREENING	Records screened (2015–2025)	2401
ELIGIBILITY FILTERS	Records included based on language (English)	2220
	Subject area: Social Sciences	483
	Document type: Articles	472
	Source type: Journal	472
	Publication Stage: Final	472
	Open access publications	278
	Studies included for bibliometric analysis	277
INCLUDED		

Table 1: Prisma Framework Adaptive Sports Research for Persons with Disabilities

The study selection process adhered to the PRISMA framework to ensure methodological transparency and reproducibility. An initial pool of 3,241 records was identified, from which one duplicate was removed. Subsequent screening based on publication years (2015–2025) reduced the dataset to 2,401 records. Language restrictions limited the dataset to 2,220 English-language publications. Further refinement based on the Social Sciences subject area yielded 483 records. Application of eligibility criteria—including document type (journal articles), source type (journals), and publication stage (final)—resulted in 472 records. Finally, restricting the dataset to open-access publications produced 278 records, of which 277 studies were retained for the final bibliometric analysis.

4.4 Inclusion and Exclusion Criteria

The study includes peer-reviewed journal articles and conference papers written in English that focus explicitly on adaptive sports and are indexed in the Scopus database. Non-research materials such as editorials, book reviews, and other non-scholarly publications were excluded to maintain analytical rigor.

4.5 Data Collection Process

The data collection process involved the systematic identification of keywords, formulation of the search query, and retrieval of bibliographic records from Scopus. Extracted data included titles, abstracts, authorship details, institutional affiliations, citation metrics, and keywords. The

dataset was then carefully screened and refined to remove irrelevant or redundant entries prior to analysis.

4.6 Bibliometric Tools

The analysis was conducted using a combination of specialized tools: VOSviewer for network visualization, Biblioshiny (Bibliometrix R package) for advanced bibliometric and thematic analysis, and Microsoft Excel for data organization and descriptive statistics.

4.7 Analytical Techniques

A range of bibliometric techniques was employed to ensure a multidimensional analysis. Performance analysis assessed research productivity across authors, institutions, journals, and countries. Citation analysis identified influential publications and intellectual impact. Co-authorship analysis examined collaborative patterns, while co-citation analysis revealed conceptual linkages within the literature. Keyword co-occurrence analysis was used to detect research hotspots, and thematic mapping traced the evolution of research themes over time.

4.8 Keyword Framework

Keywords were systematically organized into thematic categories, including adaptive sports and physical activity (such as adaptive sports, adapted physical activity, disability sports, Paralympic sports, inclusive sports.), disability classifications (such as physical disability, intellectual disability, visual impairment, hearing impairment), and participation outcomes (physical activity, rehabilitation, health benefits, empowerment, social inclusion). This categorization facilitated structured analysis and enhanced interpretability of thematic patterns.

4.9 Data Analysis Procedure

The analytical process followed a sequential framework, beginning with the definition of research scope and objectives, followed by keyword identification and data retrieval. Subsequent stages involved dataset refinement, descriptive analysis of publication trends, and application of citation and collaboration analyses. The study further employed keyword co-occurrence and thematic mapping techniques to identify research clusters and trace their evolution, culminating in an integrated interpretation of the field's intellectual progression.

5. Results and Discussion

The main characteristics of the dataset used for the bibliometric analysis are presented in the Main Information Table. The final dataset consists of 277 articles published between 2015 and 2025, drawn from 100 sources including journals and related publication outlets, indicating a broad and multidisciplinary publication base. The field demonstrates a substantial annual growth rate of 30.43%, reflecting steadily increasing scholarly attention toward sports and physical activity for the empowerment of persons with disabilities.

The average age of documents is 4.18 years, suggesting that the literature is relatively recent while still containing enough mature studies to generate citation impact. The dataset records an average of 9.137 citations per document, indicating moderate scholarly influence within an expanding research domain. In total, the articles cited 26,054 references, reflecting a considerable and growing intellectual foundation.

Regarding thematic content, the database contains 256 Keywords Plus (ID) and 819 Author Keywords (DE), demonstrating strong topical diversity and wide conceptual coverage. Authorship analysis shows 911 contributing authors, with 18 authors of single-authored documents, indicating that research in this area is predominantly collaborative in nature. This is further supported by an average of 3.8 co-authors per document and an international co-authorship rate of 30.69%, suggesting a moderate level of cross-national scholarly collaboration.

Overall, the dataset portrays a rapidly growing, collaborative, and multidisciplinary field, characterized by increasing publication output, expanding thematic diversity, and rising international engagement (see Table 2).

Description	Results
MAIN INFORMATION ABOUT DATA	
Timespan	2015:2025
Sources (Journals, Books, etc)	100
Documents	277
Annual Growth Rate %	30.43
Document Average Age	4.18
Average citations per doc	9.137
References	26054
DOCUMENT CONTENTS	
Keywords Plus (ID)	256
Author's Keywords (DE)	819
AUTHORS	
Authors	911
Authors of single-authored docs	18
AUTHORS COLLABORATION	
Single-authored docs	20
Co-Authors per Doc	3.8
International co-authorships %	30.69
DOCUMENT TYPES	
article	277

Table 2: Main Information Table

Growth and Distribution of global publications related to adaptive sports for persons with disabilities (2015-2025)

The annual scientific production trend reveals a clear and sustained increase in global research output related to adaptive sports for persons with disabilities during the study period (Fig. 1). Publication activity began at a modest level with 4 articles in 2015, followed by a notable rise to 11 publications in 2016 and 12 in 2017. This early growth phase indicates the gradual emergence of scholarly interest in adaptive sports as a distinct field of inquiry.

Between 2018 and 2020, publication output continued to expand moderately, increasing from 17 articles in 2018 to 19 articles in 2020, despite a temporary decline in 2019 (15 articles). A significant acceleration was observed from 2021 onward, when annual production increased sharply to 33 publications in 2021, followed by 29 in 2022, 42 in 2023, and 38 in 2024. The highest productivity was recorded in 2025 with 57 publications, representing the peak output during the entire study period (see Fig. 1).

Overall, the publication trajectory demonstrates strong and sustained growth, consistent with the annual growth rate of 30.43% reported in Table 2. This pattern reflects increasing global academic interest in the use of sport and physical activity as mechanisms for inclusion, rehabilitation, health promotion, and empowerment of persons with disabilities.

The citation performance by publication year provides further insight into the scholarly influence of the literature (see Table 3). Earlier publications received comparatively higher average citation impact, with 2015 recording the highest mean total citations per article (25.00), followed by 2016 (22.00) and 2018 (20.65). In contrast, recent publication years such as 2024 (4.24) and 2025 (1.11) exhibit lower mean citation values, largely due to shorter exposure time and fewer citable years. Similarly, the mean citations per year were highest for 2020 (2.44) and 2021 (2.39), indicating that studies published during these years have gained relatively stronger annual citation momentum.

These findings suggest that foundational studies published in earlier years have accumulated greater long-term citation influence, whereas recent years are characterized by rapid growth in publication volume. Together, the results indicate that adaptive sports research for persons with disabilities has evolved from a modest emerging topic into a rapidly expanding and increasingly impactful global research domain.

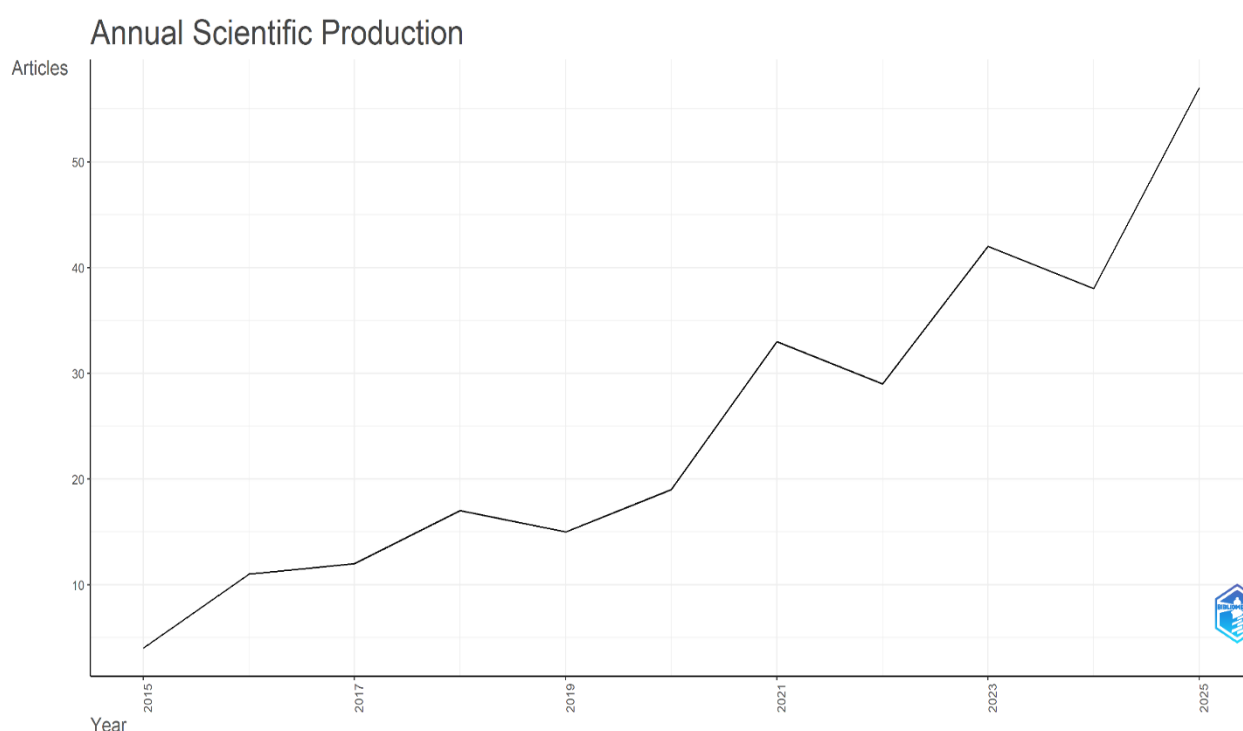


Fig 1: Annual Scientific Production in Adaptive Sports Research for Persons with Disabilities (2015–2025)

Year	Mean TC per Art	N	Mean TCper Year	Citable Years
2015	25.00	4	2.08	12
2016	22.00	11	2.00	11
2017	13.25	12	1.32	10
2018	20.65	17	2.29	9
2019	11.07	15	1.38	8
2020	17.05	19	2.44	7
2021	14.36	33	2.39	6
2022	8.17	29	1.63	5
2023	6.05	42	1.51	4
2024	4.24	38	1.41	3
2025	1.11	57	0.56	2

Table 3: Year-wise Average Citation Performance of Publications in Adaptive Sports Research for Persons with Disabilities (2015–2025)

Most influential Authors contributing to Adaptive Sports Research

The analysis of author productivity and scholarly influence identifies a relatively concentrated group of researchers who have made substantial contributions to the field of adaptive sports for persons with disabilities. As presented in Table 4, Reina R emerged as the most productive author with 6 publications, followed by Brittain I, Khoo S, Pullen E, and Townsend RC, each

contributing 5 articles. In terms of fractionalized authorship, which adjusts output according to co-authorship participation, Pullen E (2.37) ranked highest, followed by Brittain I (2.25) and Townsend RC (1.67), indicating a strong collaborative presence in the field.

Author-level impact indicators provide further insight into scholarly influence. As shown in Table 5, Townsend RC recorded the highest total citations (186), followed by Brittain I (175), Cushion CJ (163), Pullen E (113), and Reina R (101). These findings suggest that citation impact is not always directly aligned with publication count, as some scholars have exerted greater influence through fewer but highly cited contributions. In terms of sustained scholarly performance, Brittain I, Pullen E, and Reina R each achieved the highest h-index of 5, indicating that at least five of their publications have received five or more citations each. Reina R also attained the highest g-index of 6, reflecting stronger cumulative citation performance. Meanwhile, Anam K recorded the highest m-index (1.00), suggesting rapid recent scholarly impact since entering the field in 2024.

The internal influence of authors within the present dataset is highlighted through local citation analysis. As presented in Table 6, Brittain I ranked first with 22 local citations, closely followed by Townsend RC (21) and Cushion CJ (18). Other notable contributors included Pullen E (13), Beacom A (12), Silk M (12), and Smith B (12). High local citation counts indicate that these authors are frequently referenced by other studies within the adaptive sports research domain, thereby occupying a central role in shaping the internal knowledge structure of the field.

Overall, the combined evidence from productivity (Table 4), citation impact (Table 5), and local influence (Table 6) demonstrates that the field is led by a core group of scholars, particularly Brittain I, Townsend RC, Reina R, and Pullen E. Their repeated prominence across multiple indicators suggests that they have played a significant role in advancing scholarly understanding of adaptive sports as a means of empowerment, inclusion, and participation for persons with disabilities.

Author	Articles	Articles Fractionalized
REINA R	6	1.50
BRITTAI N I	5	2.25
KHOO S	5	1.49
PULLEN E	5	2.37
TOWNSEND RC	5	1.67
PÉREZ-TEJERO J	4	0.93
ANAM K	3	0.41
BASSIRI M	3	0.92
BEN RAKAA O	3	0.92
BRIGHTON J	3	1.08

Table 4: Most Productive Authors in Adaptive Sports Research for Persons with Disabilities

Author	h_index	g_index	m_index	TC	NP	PY_start
BRITTAI N I	5	5	0.455	175	5	2016

PULLEN E	5	5	0.714	113	5	2020
REINA R	5	6	0.455	101	6	2016
KHOO S	4	5	0.667	52	5	2021
TOWNSEND RC	4	5	0.333	186	5	2015
ANAM K	3	3	1	51	3	2024
BRIGHTON J	3	3	0.333	58	3	2018
CUSHION CJ	3	3	0.25	163	3	2015
HASLETT D	3	3	0.5	18	3	2021
KIRAKOSYAN L	3	3	0.375	34	3	2019

Table 5: Author Impact Indicators (h-index, g-index, m-index, and Total Citations)

Author	Local Citations
BRITTAI N I	22
TOWNSEND RC	21
CUSHION CJ	18
PULLEN E	13
BEACOM A	12
SILK M	12
SMITH B	12
CLAYTON B	7
IVES B	7
JACKSON D	7

Table 6: Most Locally Cited Authors in Adaptive Sports Research for Persons with Disabilities

Most influential Journals contributing to Adaptive Sports Research

The source analysis reveals that scholarly output on adaptive sports for persons with disabilities is concentrated in a select group of journals, while the broader literature remains distributed across multiple publication outlets. As presented in Table 7, *Frontiers in Sports and Active Living* emerged as the most productive source with 33 articles, followed by the *European Journal of Adapted Physical Activity* (19 articles), *Retos* (15 articles), *Qualitative Research in Sport, Exercise and Health* (12 articles), and *Disabilities* (11 articles). These findings indicate that journals specializing in sport sciences, adapted physical activity, rehabilitation, and disability studies serve as the primary dissemination platforms for this research domain.

Journal impact indicators provide further evidence regarding scholarly influence. As shown in Table 8, *Qualitative Research in Sport, Exercise and Health* recorded the highest h-index (9) and total citations (222), indicating sustained citation performance and strong academic visibility. *Frontiers in Sports and Active Living* and the *European Journal of Adapted Physical Activity* each achieved an h-index of 7, with total citations of 160 and 114, respectively. *Sustainability (Switzerland)* also demonstrated notable influence with 156 citations and an h-

index of 6, reflecting the growing intersection between sustainability discourse, inclusive sport, and disability empowerment.

The source impact pattern suggests that influence is not determined solely by publication volume. For example, while *Frontiers in Sports and Active Living* led in article output, *Qualitative Research in Sport, Exercise and Health* demonstrated stronger citation impact, indicating that journals emphasizing qualitative, sociocultural, and experiential dimensions of sport have produced highly influential scholarship within the field.

Bradford's Law analysis further highlights the concentration of literature in a small nucleus of core journals. As illustrated in Fig. 2, the shaded core zone includes highly productive sources such as *Frontiers in Sports and Active Living*, *European Journal of Adapted Physical Activity*, *Retos*, *Qualitative Research in Sport, Exercise and Health*, *Disabilities*, and *Sustainability (Switzerland)*. This distribution confirms that a limited number of journals account for a substantial share of publications, while the remaining studies are scattered across a wider range of secondary sources.

Overall, the results indicate that adaptive sports research for persons with disabilities is supported by a well-defined core journal ecosystem led by sport science, adapted physical activity, and interdisciplinary social science outlets. These journals have played a critical role in shaping the intellectual development, visibility, and continued expansion of the field.

Sources	Articles
FRONTIERS IN SPORTS AND ACTIVE LIVING	33
EUROPEAN JOURNAL OF ADAPTED PHYSICAL ACTIVITY	19
RETOS	15
QUALITATIVE RESEARCH IN SPORT, EXERCISE AND HEALTH	12
DISABILITIES	11
SUSTAINABILITY (SWITZERLAND)	9
INTERNATIONAL JOURNAL OF DISABILITIES SPORTS AND HEALTH SCIENCES	8
SPORT IN SOCIETY	8
APUNTS. EDUCACION FISICA Y DEPORTES	6
INTERNATIONAL JOURNAL OF HUMAN MOVEMENT AND SPORTS SCIENCES	6

Table 7: Most Productive Journals in Adaptive Sports Research for Persons with Disabilities

Source	h_inde x	g_inde x	m_inde x	TC	N P	PY_sta rt
QUALITATIVE RESEARCH IN SPORT, EXERCISE AND HEALTH	9	12	1	222	12	2018
EUROPEAN JOURNAL OF ADAPTED PHYSICAL ACTIVITY	7	10	0.583	114	19	2015
FRONTIERS IN SPORTS AND ACTIVE LIVING	7	11	1.167	160	33	2021

SUSTAINABILITY (SWITZERLAND)	6	9	0.75	156	9	2019
RETOS	5	9	1	89	15	2022
SPORT IN SOCIETY	5	8	0.5	144	8	2017
COMMUNICATION AND SPORT	4	4	0.571	86	4	2020
INTERNATIONAL REVIEW FOR THE SOCIOLOGY OF SPORT	4	4	0.571	82	4	2020
SOCIAL INCLUSION	4	5	0.4	96	5	2017
SOCIOLOGY OF SPORT JOURNAL	4	4	0.667	62	4	2021

Table 8: Journal Impact Indicators (h-index, g-index, m-index, and Total Citations)

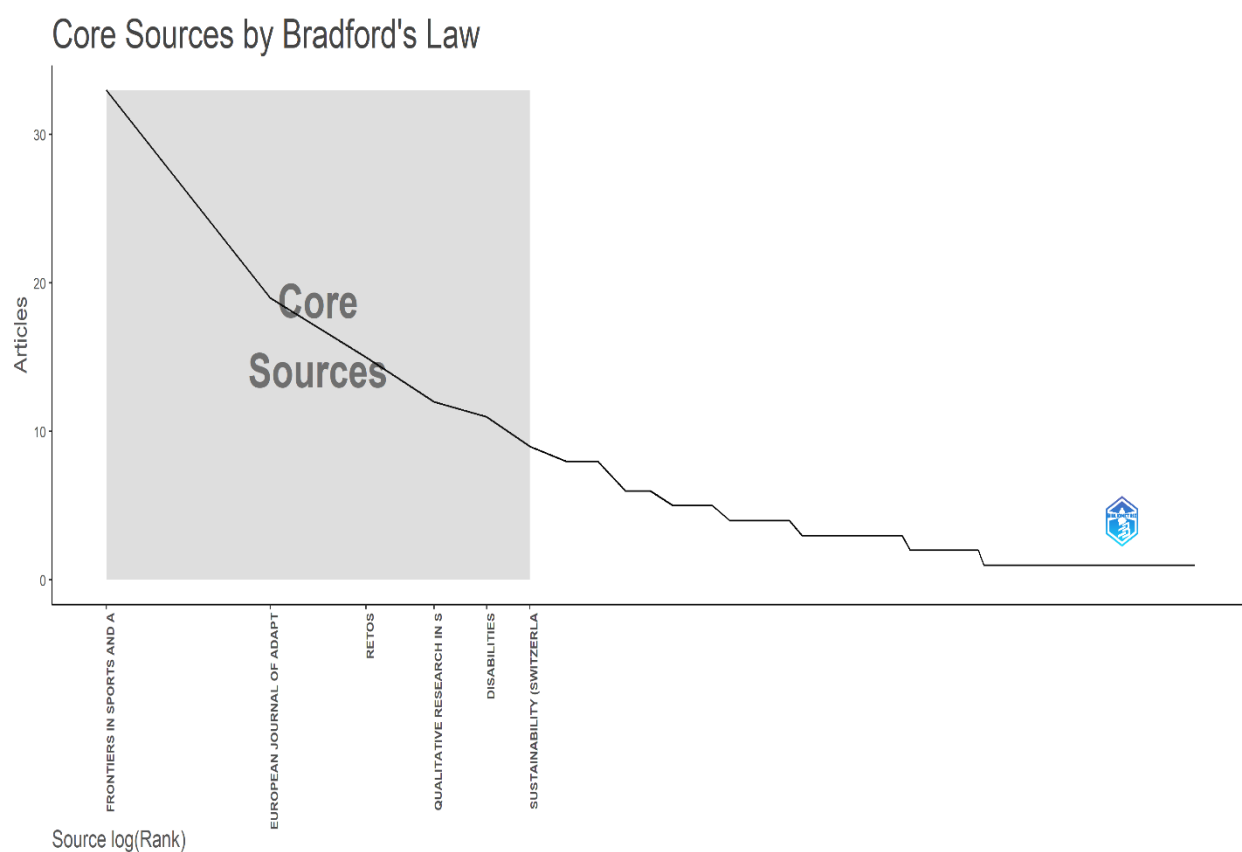


Fig 2: Core Journals in Adaptive Sports Research Based on Bradford's Law

Most influential Institutions contributing to Adaptive Sports Research

Institutional productivity analysis indicates that research on adaptive sports for persons with disabilities is led by a relatively concentrated group of universities and research organizations that have played a significant role in advancing the field. As presented in Table 9,

Loughborough University emerged as the most productive institution with 16 publications, substantially outperforming other affiliations in the dataset. This highlights the university's strong academic presence in sport science, disability inclusion, and applied physical activity research.

The second highest contributor was Leeds Beckett University with 9 publications, followed by the University of British Columbia with 8 publications. Miguel Hernández University ranked next with 6 publications, while Umeå University, University of Waikato, Université de Lorraine, and Western University each contributed 5 publications. Bournemouth University also featured among the leading institutions with 4 publications.

The dominance of these institutions suggests that adaptive sports research is strongly supported by universities with established strengths in sport sciences, rehabilitation studies, inclusive education, kinesiology, and social policy research. The presence of institutions from the United Kingdom, Canada, Spain, Sweden, New Zealand, France, and other regions further reflects the international and multidisciplinary nature of the field.

Notably, the appearance of Independent Researcher among the top affiliations indicates that meaningful scholarly contributions are also being made outside traditional institutional settings. This may reflect growing openness in interdisciplinary disability research, practitioner-led scholarship, or independent expertise in adaptive sport and inclusion studies.

The prominence of Loughborough University and other sport-oriented institutions may also be linked to increasing academic engagement with para-sport performance, athlete development, disability empowerment, and policy initiatives aligned with global movements such as the Paralympic Games and inclusive physical activity frameworks.

Overall, the findings reveal that institutional leadership in this field is concentrated in a limited number of internationally recognized universities, particularly those with strong traditions in sport, health, and disability-related research. These institutions have played a central role in shaping the scholarly development and global visibility of adaptive sports research for persons with disabilities.

Affiliation	Articles
LOUGHBOROUGH UNIVERSITY	16
LEEDS BECKETT UNIVERSITY	9
UNIVERSITY OF BRITISH COLUMBIA	8
MIGUEL HERNÁNDEZ UNIVERSITY	6
INDEPENDENT RESEARCHER	5
UMEÅ UNIVERSITY	5
UNIVERSITY OF WAIKATO	5
UNIVERSITÉ DE LORRAINE	5
WESTERN UNIVERSITY	5
BOURNEMOUTH UNIVERSITY	4

Table 9: Most Productive Institutions in Adaptive Sports Research

Most influential Countries contributing to Adaptive Sports Research

Country-level analysis reveals that research on adaptive sports for persons with disabilities is led by a group of nations with strong academic systems, developed sport infrastructures, and growing commitments to disability inclusion. As presented in Table 10, the United Kingdom emerged as the most productive corresponding-author country with 45 publications (16.2%), followed by Canada (31; 11.2%), Brazil (25; 9.0%), Spain (15; 5.4%), and the United States (14; 5.1%). These findings indicate that the field is particularly active in Europe and the Americas.

In terms of domestic and international collaboration, the United Kingdom recorded 35 single-country publications (SCP) and 10 multiple-country publications (MCP), while Canada demonstrated a comparatively stronger collaborative profile with 11 MCPs and an MCP ratio of 35.5%. Germany and Italy each reported an MCP ratio of 37.5%, indicating a high proportion of internationally co-authored studies. In contrast, Turkey showed no multiple-country publications, suggesting that its contributions were primarily domestically produced.

The broader scientific production pattern, based on total country appearances, further confirms the dominance of the United Kingdom. As shown in Fig 3, the UK recorded the highest publication frequency (104 occurrences), followed by Canada (70), Brazil (58), Spain (53), and the USA (40). Other notable contributors included Sweden (34), Indonesia (33), Chile (32), Italy (27), and Portugal (25). This indicates that research participation is geographically diverse, extending beyond traditionally dominant Anglophone nations.

Citation impact analysis offers additional insight into national scholarly influence. As presented in Table 11, the United Kingdom also led in total citations with 816 citations, far surpassing other countries. It was followed by Canada (297), Brazil (179), Spain (167), and Germany (130). However, when average article citations are considered, New Zealand ranked highest with 28.70 citations per article, followed by the United Kingdom (18.10) and Germany (16.20). This suggests that while some countries lead in publication volume, others achieve stronger per-paper influence through highly impactful studies.

The prominent position of the United Kingdom and Canada may be associated with their strong para-sport ecosystems, inclusive sport policies, disability rights advocacy, and active academic communities in sport science and rehabilitation research. Likewise, the strong presence of Brazil and Spain may reflect increasing regional attention to inclusive physical activity, Paralympic development, and social participation through sport.

Overall, the results indicate that adaptive sports research for persons with disabilities is globally distributed but led by a small group of influential countries, particularly the United Kingdom, Canada, Brazil, and Spain. These nations have played a central role in shaping the productivity, collaboration patterns, and citation influence of the field.

Country	Articles	Articles %	SCP	MCP	MCP %
UNITED KINGDOM	45	16.2	35	10	22.2
CANADA	31	11.2	20	11	35.5
BRAZIL	25	9	18	7	28
SPAIN	15	5.4	11	4	26.7
USA	14	5.1	11	3	21.4
SWEDEN	11	4	9	2	18.2
AUSTRALIA	8	2.9	6	2	25
GERMANY	8	2.9	5	3	37.5
ITALY	8	2.9	5	3	37.5
TURKEY	8	2.9	8	0	0

Table 10: Corresponding Author Countries and International Collaboration Patterns in Adaptive Sports Research

Country Scientific Production

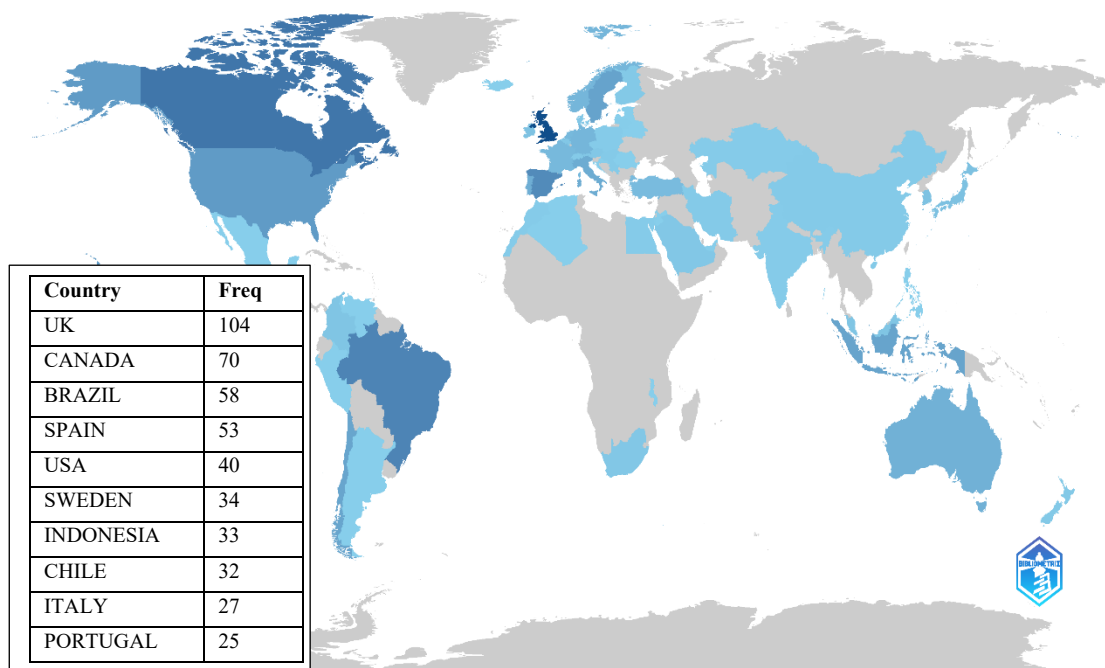


Fig 3: Country-wise Scientific Production in Adaptive Sports Research

Country	TC	Average Article Citations
UNITED KINGDOM	816	18.10
CANADA	297	9.60
BRAZIL	179	7.20
SPAIN	167	11.10
GERMANY	130	16.20

AUSTRALIA	100	12.50
NEW ZEALAND	86	28.70
SWEDEN	77	7.00
USA	71	5.10
ITALY	69	8.60

Table 11: Most Influential Countries Based on Citation Impact in Adaptive Sports Research

Citation Patterns in Adaptive Sports Research

Citation analysis was conducted to identify the most influential publications shaping the development of adaptive sports research for persons with disabilities. Both global and local citation indicators were examined to capture broader scholarly impact as well as influence within the present dataset.

Global citation analysis reveals that a small number of landmark studies have attracted substantial academic attention. As presented in Table 12, Bartsch et al. (2016) emerged as the most globally cited publication with 110 total citations, followed by Townsend et al. (2016) with 81 citations, and Brittain and Beacom (2016) with 75 citations. Other highly cited works included Ives et al. (2021) (52 citations), Kolotouchkina et al. (2020) (50 citations), Pettican et al. (2022) (47 citations), and both Townsend and Cushion (2020) and McPherson et al. (2016) with 46 citations each. These findings indicate that influential contributions have emerged from both early foundational studies and more recent publications.

When citation intensity is considered through annualized citation rates, more recent studies demonstrate notable momentum. Bartsch et al. (2016) recorded the highest TC per year (12.22), followed closely by Pettican et al. (2022) with 11.75, Ives et al. (2021) with 8.67, and Kolotouchkina et al. (2020) with 8.33. In terms of normalized total citations, Pettican et al. (2022) ranked highest (7.77), suggesting strong recent visibility and rapid scholarly uptake. This pattern implies that newer studies addressing contemporary issues in adaptive sport are gaining influence quickly.

Local citation analysis provides insight into the internal intellectual structure of the field by identifying studies most frequently cited within the present dataset. As shown in Table 13, Townsend et al. (2016) ranked first with 11 local citations, followed by Brittain and Beacom (2016) with 9, and Ives et al. (2019) with 7. Mauerberg-Decastro et al. (2016) and Townsend et al. (2018) each received 6 local citations, while several other studies, including Pullen and Silk (2019) and Kolotouchkina et al. (2021), recorded 4 local citations each.

The local citation pattern suggests that works by Townsend, Brittain, Beacom, and related scholars occupy a central position in the field's internal discourse. Their repeated presence indicates that research concerning inclusion, policy, athlete experience, social participation, and structural barriers in adaptive sport has significantly shaped subsequent scholarship.

A comparison between global and local citation performance reveals meaningful differences. Some studies with strong international visibility are also highly central within the dataset, particularly Townsend et al. (2016) and Brittain and Beacom (2016). Conversely, certain papers demonstrate stronger internal relevance than broader citation counts alone might suggest, indicating their importance to the specialized adaptive sports literature.

Overall, the citation patterns demonstrate that the intellectual foundation of adaptive sports research for persons with disabilities has been shaped by a combination of pioneering conceptual works and rapidly emerging contemporary studies. The field appears increasingly dynamic, with recent publications gaining traction while earlier influential studies continue to serve as key reference points for ongoing scholarship.

Paper	DOI	Total Citations	TC per Year	Normalized TC
Bartsch et al., 2016	10.1177/0093650215626984	110	12.22	5.33
	10.1080/21640629.2016.115732			
Townsend et al., 2016	4	81	6.75	3.24
Brittain & Beacom, 2016	10.1177/0193723516655580	75	6.82	3.41
	10.1080/17430437.2019.170368			
Ives et al., 2021	3	52	8.67	3.62
Kolotouchkina et al., 2020	10.3390/su13010256	50	8.33	3.48
	10.1080/2159676X.2022.214616			
Pettican et al., 2022	4	47	11.75	7.77
Townsend & Cushion, 2020	10.1177/1468794120931349	46	7.67	3.20
	10.1080/09687599.2016.119782			
Mcpherson et al., 2016	3	46	4.18	2.09
Mauerberg-Decastro et al., 2016	10.1590/S1980-6574201600030001	42	3.82	1.91
	10.1080/17430437.2016.122588			
Howe & Silva, 2016	5	41	4.56	1.99

Table 12: Most Globally Cited Documents in Adaptive Sports Research

Paper	DOI	Year	Local Citations	Global Citations	LC/GC	Normalized Local Citations	Normalized Global Citations
					Ratio (%)		
Townsend et al., 2016	10.1080/21640629.2016.1157324	2016	11	81	13.58	3.67	3.24

Brittain & Beacom, 2016	10.1177/0193723516655580	201	6	9	75	12.00	4.13	3.41
Ives et al., 2019	10.1080/17430437.2019.1703683	201	9	7	52	13.46	6.60	3.62
Mauerberg-Decastro et al., 2016	10.1590/S1980-6574201600030001	201	6	6	42	14.29	2.75	1.91
Townsend et al., 2018	10.1177/1012690218797526	201	8	6	36	16.67	4.07	2.11
Pullen & Silk, 2019	10.1080/09502386.2019.1621917	201	9	5	31	16.13	3.39	1.82
Dehghansai et al., 2021	10.3389/fspor.2021.635977	202	1	4	38	10.53	3.77	2.65
Pullen et al., 2019	10.1177/2167479519837549	201	9	4	39	10.26	2.71	2.29
Kolotouchkina et al., 2021	10.3390/su13010256	202	1	4	50	8.00	3.77	3.48
Mcpherson et al., 2016	10.1080/09687599.2016.1197823	201	6	4	46	8.70	1.83	2.09

Table 13: Most Locally Cited Documents in Adaptive Sports Research

Intellectual structures of Adaptive Sports Research

To examine the intellectual structure of adaptive sports research for persons with disabilities, a cited reference co-citation analysis was performed using VOSviewer. The analysis was based on full counting, with a minimum threshold of 6 citations per cited reference. Out of 12,131 cited references, 20 references met the threshold, of which the largest connected set consisted of 19 references. These references were organized into three major clusters, representing the principal knowledge domains underpinning the field, as illustrated in Fig. 4.

The red cluster represents the dominant theoretical and methodological foundation of the field, combining disability studies perspectives with qualitative research approaches. Key references in this cluster include Oliver's *Understanding Disability: From Theory to Practice*, Gavron's *Disability Sport*, Thomas's *Female Forms: Experiencing and Understanding Disability*, and influential works by Howe addressing the Paralympic paradox, technology, and athlete representation. Methodological contributions such as Clarke's *Reflecting on Reflexive Thematic Analysis*, Smith's *Qualitative Research Methods in Sport, Exercise and Health*, and Weate's work on thematic analysis also appear prominently. This cluster indicates that adaptive sports scholarship is strongly grounded in critical disability theory and qualitative inquiry, emphasizing lived experiences, embodiment, identity, and sociocultural barriers.

The green cluster reflects scholarship centered on inclusion, ableism, legacy, and participatory sport environments. Influential works include Beacom's study on the London 2012 Paralympic Games legacy, Campbell's *Contours of Ableism*, Kiuppis's work on inclusion in sport, and Bundon's discussion of disability models in sport. Additional methodological references, such as Clarke and McGannon, also appear within this cluster. The presence of these studies suggests that a significant strand of the literature focuses on policy outcomes, inclusive participation, structural discrimination, and social justice in sport contexts.

The blue cluster represents the policy and rights-based framework underpinning adaptive sports research. This cluster is anchored by the Convention on the Rights of Persons with Disabilities (2006) and associated organizational documents. Its prominence indicates that international human rights discourse and policy frameworks have become important reference points for understanding participation rights, accessibility, equality, and institutional responsibility in adaptive sports.

The co-citation structure demonstrates that adaptive sports research is intellectually interdisciplinary, drawing from disability studies, sociology of sport, qualitative methodology, inclusion studies, and international rights frameworks. The strongest and most central cluster is the red cluster, suggesting that critical disability perspectives and qualitative approaches constitute the core intellectual base of the field.

Overall, the results reveal that the knowledge structure of adaptive sports research for persons with disabilities has evolved around three interconnected foundations: (i) critical disability theory and qualitative inquiry, (ii) inclusion and anti-ableist sport scholarship, and (iii) rights-based policy frameworks. This confirms that the field extends beyond performance-oriented sport science and is deeply engaged with broader questions of equity, participation, and empowerment.

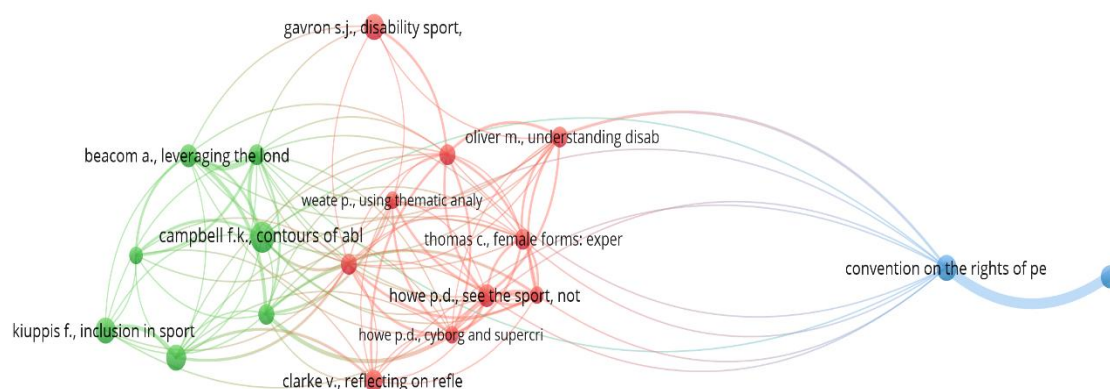


Figure 4: Co-citation Network of Cited References in Adaptive Sports Research

Collaborative research network among Scholars in Adaptive Sports Research

To examine researcher-level collaboration patterns in adaptive sports research for persons with disabilities, a co-authorship analysis was conducted using VOSviewer. The analysis was based on authors as the unit of analysis, with a minimum threshold of 3 documents per author. Out of 918 authors, 32 authors met the threshold requirement. However, the largest connected set consisted of only 7 authors, indicating that sustained collaboration among the most productive scholars remains relatively limited. The resulting network is presented in Fig. 5.

The author collaboration map shows a single connected cluster comprising seven researchers: Martinez-Roig Rosabel, Setyawan Hendra, Anam Khoiril, Susanto Nugroho, Latino Francesca, Tafuri Francesco, and Saraiello Emma. The dense interlinkages among these authors suggest repeated co-authorship relationships and the presence of a small but active collaborative team within the broader field.

Despite the growth of publications in recent years, the limited size of the largest connected network indicates that adaptive sports research is still characterized by fragmented authorship patterns. Many productive scholars appear to work independently or within small isolated teams rather than in large international research consortia. This is a common feature of developing interdisciplinary fields where expertise is distributed across sport science, rehabilitation, sociology, education, psychology, and disability studies.

The presence of geographically diverse names within the connected cluster may also indicate cross-national or cross-institutional collaboration, suggesting that emerging partnerships are beginning to form across regions. Such collaboration is important for advancing comparative studies, sharing best practices, and improving inclusive sport policy development.

Overall, the author co-authorship analysis reveals that while adaptive sports research for persons with disabilities has an expanding publication base, its social structure remains moderately dispersed with only a limited core of closely collaborating scholars. Strengthening international and interdisciplinary collaboration networks may further enhance innovation, methodological rigor, and global impact in the field.

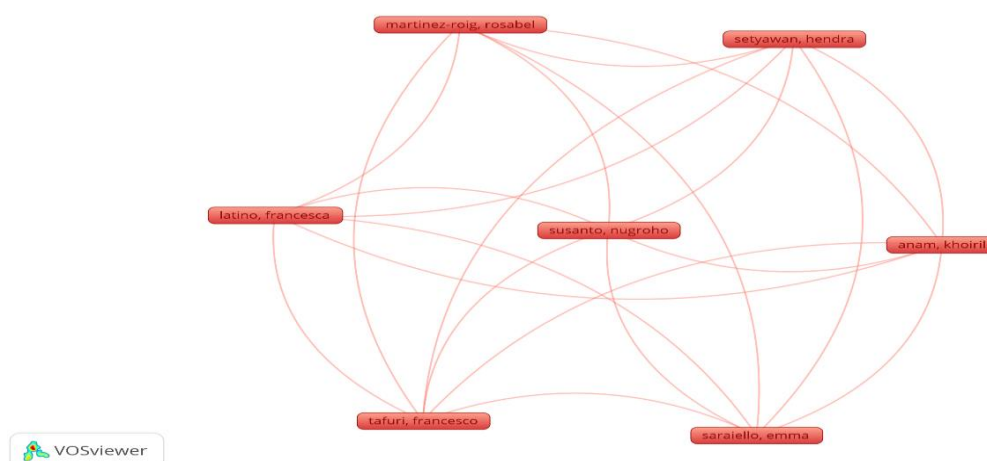


Figure 5: Author Co-authorship Network in Adaptive Sports Research

Collaborative research network among Institutions in Adaptive Sports Research

To assess collaboration at the organizational level, a co-authorship analysis based on institutions was conducted using VOSviewer. The unit of analysis was organizations, with a minimum threshold of 2 documents per institution. Out of 697 institutions, 34 institutions met the threshold requirement, while the largest connected set consisted of 7 institutions. The resulting institutional collaboration network is presented in Fig. 6.

The map reveals a compact but clearly connected cluster of collaborating institutions. The principal organizations in this network include Pegaso University (Italy), University of Alicante (Spain), University of Naples “Parthenope”, Padang State University (Indonesia), Universitas Negeri Semarang (Indonesia), Universitas Negeri Yogyakarta (Indonesia), and Niccolò Cusano University (Italy). The presence of repeated links among these institutions indicates active co-authorship relationships and sustained research cooperation.

The network suggests two notable collaboration poles. First, a Southern European axis involving Italian and Spanish universities appears prominent, reflecting regional cooperation in sport science, adapted physical activity, and disability studies. Second, an Indonesian institutional cluster involving Padang State University, Universitas Negeri Semarang, and Universitas Negeri Yogyakarta demonstrates growing research engagement from Southeast Asia. Connections between these regional groups imply emerging international partnerships.

Despite these linkages, the relatively small largest connected set indicates that institutional collaboration across the field remains limited overall. Many productive organizations outside the core network appear isolated or operate within small independent teams. This pattern suggests that adaptive sports research for persons with disabilities is still developing a broader global institutional collaboration structure.

The concentration of collaboration among universities may also reflect the interdisciplinary nature of the field, where sport science departments, physical education faculties, rehabilitation units, and social science researchers collaborate within specific academic hubs rather than through large multinational consortia.

Overall, the institutional co-authorship analysis demonstrates that while a number of universities are actively contributing to the field, collaboration is concentrated within a small interconnected core of seven institutions. Expanding partnerships across regions and institutions may strengthen comparative research, resource sharing, and innovation in adaptive sports scholarship.

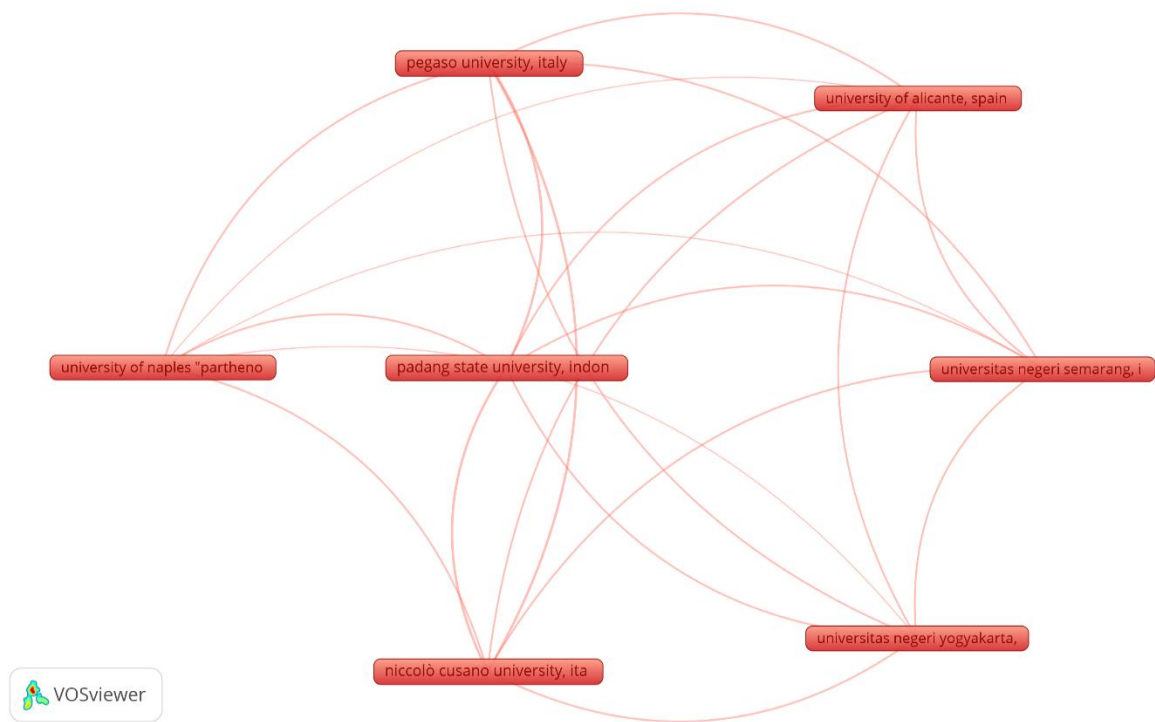


Figure 6: Institutional Co-authorship Network in Adaptive Sports Research

Dominant research themes and Emerging topics in Adaptive Sports Research

To identify the conceptual structure and thematic trends of adaptive sports research for persons with disabilities, a keyword co-occurrence analysis was conducted using VOSviewer based on author keywords. Using a minimum threshold of 5 occurrences, 31 keywords out of 819 total keywords met the inclusion criteria. The resulting network and overlay visualizations are presented in Fig. 7 and Fig. 8, respectively.

The network map reveals several interconnected thematic clusters centered around the highly prominent keyword “disability”, which occupies the most central position in the map. This indicates that the broader disability discourse remains the conceptual anchor of the field. Closely linked to this node are other high-frequency terms such as sport, physical activity, inclusion, disability sport, para-sport, and Paralympics, suggesting that current scholarship is strongly oriented toward participation, inclusive sport systems, and disability-centered sport development.

A major cluster focuses on inclusion, participation, and access, represented by keywords such as *inclusion*, *participation*, *people with disabilities*, and *barriers*. This cluster highlights continuing scholarly concern with equal opportunity, structural exclusion, environmental constraints, and strategies to improve access to sport and physical activity for persons with disabilities. The prominence of these terms suggests that social inclusion remains one of the dominant priorities in the field.

Another important thematic area relates to competitive and elite sport contexts, represented by terms such as *Paralympics*, *para-sport*, *classification*, and *media*. This cluster reflects growing attention to Paralympic systems, athlete categorization, media representation, and the institutional dimensions of elite adaptive sport. The strong link between *Paralympics* and *media* indicates increasing scholarly interest in visibility, representation, and public discourse surrounding disability sport.

A third cluster centers on health and psychosocial outcomes, including keywords such as *health*, *quality of life*, *sport psychology*, and *exercise*. These themes suggest that adaptive sports research increasingly recognizes sport participation not only as recreation or competition, but also as a pathway to wellbeing, rehabilitation, mental health, and life satisfaction.

The map also identifies population-specific themes such as cerebral palsy, visual impairment, intellectual disability, physical disability, and wheelchair basketball, indicating a diversification of research toward specific impairment groups and sport modalities.

The overlay visualization provides insight into recent developments between 2021 and 2024. Earlier themes (blue tones) include *disability sport*, *coaching*, *wheelchair basketball*, and *adapted physical activity*, suggesting foundational emphasis on sport structures and training contexts. More recent themes (green to yellow tones) include quality of life, adapted sport, cerebral palsy, education, gender, and participation, indicating an emerging shift toward person-centered outcomes, equity, intersectionality, and inclusive development.

Overall, the findings reveal that adaptive sports research for persons with disabilities has evolved from a traditional sport-performance orientation toward a broader multidimensional agenda emphasizing inclusion, wellbeing, diversity, participation rights, and quality of life. The most dominant theme is the relationship between disability and sport participation, while the most emerging themes relate to quality of life, gender, education, and condition-specific inclusion.

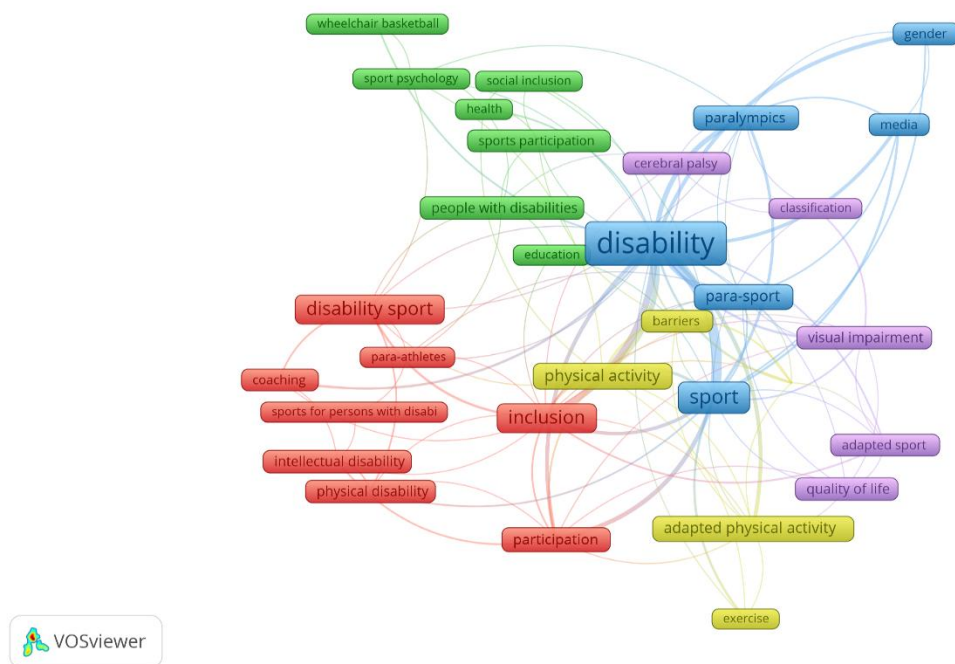


Figure 7: Keyword Co-occurrence Network in Adaptive Sports Research

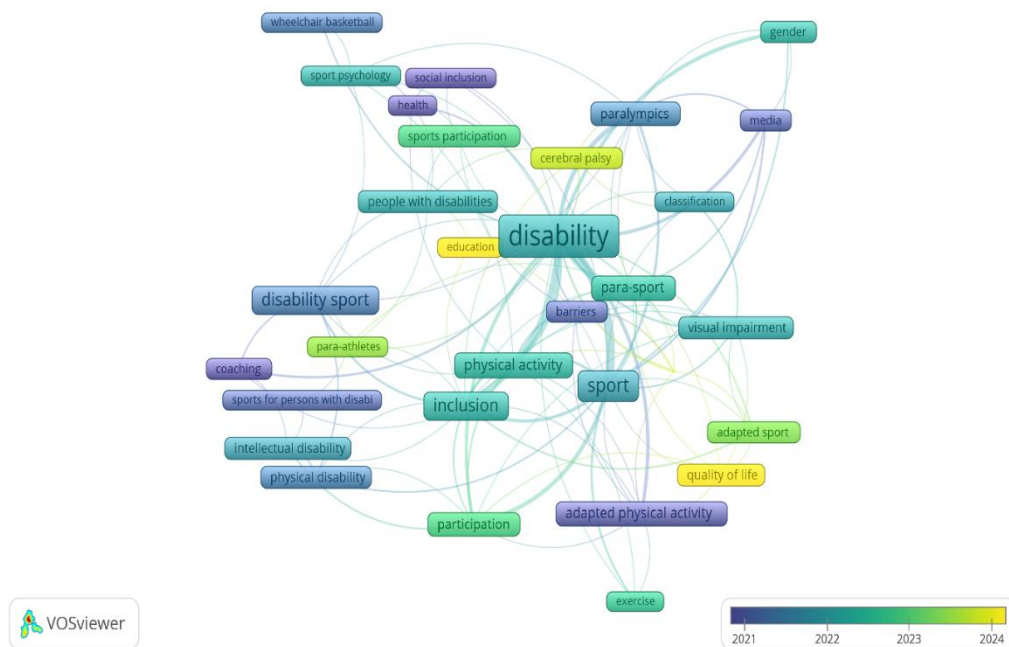


Figure 8: Overlay Visualization of Emerging Topics in Adaptive Sports Research

Thematic evolution of key terms in Adaptive Sports Research

To examine the longitudinal development of research themes, a thematic evolution analysis was conducted using Biblioshiny by dividing the study period into two phases: 2015–2020 and 2021–2025. The resulting Sankey diagram is presented in Fig. 9, illustrating how earlier themes evolved into more recent thematic priorities.

During the 2015–2020 period, the dominant themes included disability, legacy, intellectual disability, physical activity, disabled persons, inclusion, and adapted physical education. These themes indicate that early scholarship was strongly focused on disability identity, participation rights, educational inclusion, and the broader social impact of adaptive sport initiatives. The prominence of *legacy* suggests scholarly attention to the long-term effects of mega-events such as the Paralympic Games on accessibility, policy, and social awareness.

In the subsequent 2021–2025 phase, the thematic landscape became more specialized and sport-oriented. Major themes included disability, inclusion, adapted physical activity, disability sport, Paralympic, and adaptive sports. This demonstrates that while the foundational concern with disability remained central, the field increasingly shifted toward applied domains such as structured sport participation, adapted exercise programs, elite para-sport systems, and specific adaptive sport modalities.

The strongest continuity in the map is observed for the keyword disability, which remained the most dominant theme across both periods. This indicates that adaptive sports scholarship continues to be conceptually grounded in disability studies, inclusion frameworks, and rights-based perspectives.

Another important transition is the evolution of inclusion from an early social participation theme into a more prominent contemporary research stream. This suggests growing interest in practical inclusion strategies, accessibility, and equitable sport environments for persons with disabilities.

Similarly, the movement from adapted physical education and physical activity toward adapted physical activity reflects increasing integration between education, rehabilitation, and lifelong sport participation frameworks.

The emergence of Paralympic, disability sport, and adaptive sports in the later period further indicates maturation of the field, where research has moved beyond general disability discourse toward specialized competitive sport systems, athlete development, and sport management issues.

Overall, the thematic evolution analysis demonstrates that adaptive sports research for persons with disabilities has progressed from foundational concerns related to disability inclusion and educational access toward a more diversified and practice-oriented research agenda emphasizing adaptive sport participation, Paralympic systems, physical activity promotion, and inclusive sport environments.



Figure 9: Thematic Evolution of Adaptive Sports Research (2015-2025)

6. Implications of the Study

Academic Implications

This study makes a significant contribution to the academic discourse on adaptive sports by systematically mapping its intellectual structure and developmental trajectory. Through bibliometric techniques, the research identifies key authors, influential journals, collaborative networks, and evolving thematic clusters, thereby offering a structured synthesis of a previously fragmented body of literature. The findings highlight the interdisciplinary nature of the field, drawing from sport science, disability studies, rehabilitation, and social sciences. Such insights not only advance theoretical understanding but also provide a foundation for future scholarly inquiry. By revealing emerging themes such as inclusion, quality of life, and Paralympic development, the study aligns with broader shifts in disability research toward rights-based and participatory frameworks (Brittain & Beacom, 2016; Howe, 2008).

Practical Implications

The findings offer valuable guidance for practitioners, including coaches, rehabilitation specialists, and sport program developers. The identified research trends emphasize the growing importance of adaptive sports as a mechanism for improving physical health, psychological well-being, and social integration among persons with disabilities. Insights into participation barriers, inclusive practices, and sport-specific interventions can inform the design of evidence-based training programs and rehabilitation strategies. Moreover, the increasing focus on quality of life and psychosocial outcomes underscores the need for holistic program development that goes beyond physical performance (Jaarsma et al., 2014; Smith et al., 2016).

Policy Implications

From a policy perspective, the study provides evidence to support the development of inclusive sport policies and infrastructure. The prominence of themes such as accessibility, inclusion, and rights-based participation reflects the growing alignment of adaptive sports research with international frameworks such as the United Nations Convention on the Rights of Persons with Disabilities (UN, 2006). Policymakers can utilize these insights to enhance accessibility to sports facilities, promote inclusive participation, and support grassroots and elite-level adaptive sports initiatives. Additionally, the identification of leading countries and institutions highlights global disparities and opportunities for international collaboration and policy transfer.

7. Limitations of the Study

Despite its contributions, the study has certain limitations that should be acknowledged. First, the analysis is restricted to publications indexed in the Scopus database, which, although comprehensive, may not capture all relevant literature available in other databases such as Web of Science or Dimensions. Second, the inclusion of only English-language publications may introduce language bias and limit the representation of research from non-English-speaking regions. This may particularly affect the visibility of studies conducted in developing countries where adaptive sports initiatives are increasingly gaining importance. Finally, bibliometric analysis, by its quantitative nature, may not fully capture the contextual depth and qualitative nuances of individual studies, thereby necessitating complementary methodological approaches.

8. Future Research Directions

Future research can build upon the present study by expanding the scope of data sources to include multiple databases, thereby enhancing coverage and representativeness. Comparative analyses across different disability categories, sports types, and regional contexts would provide deeper insights into the heterogeneity of adaptive sports participation and outcomes. Additionally, integrating bibliometric approaches with systematic literature reviews or meta-analyses could offer a more comprehensive understanding of the effectiveness of adaptive sports interventions. Emerging areas such as technology-assisted sports, gender inclusivity, and intersectionality in disability sport also warrant further exploration. Strengthening international collaboration networks may further enhance the global impact and applicability of research in this field.

9. Conclusion

Adaptive sports have emerged as a critical domain for promoting health, empowerment, and social inclusion among persons with disabilities. The rapid growth of scholarly output over the past decade reflects increasing global recognition of the role of sport in advancing disability rights and well-being. This study provides a comprehensive bibliometric overview of adaptive sports research, highlighting key contributors, collaboration patterns, and thematic developments. The findings indicate a shift from traditional performance-oriented research toward a more inclusive and multidimensional perspective that emphasizes participation, equity, and quality of life. By offering a structured understanding of the field, this study supports evidence-based decision-making and contributes to the advancement of inclusive sports practices, policies, and research agendas.

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Author Contributions

First Author: Conceptualization, supervision, data curation, writing, review, and editing.
Second Author: Bibliometric analysis, visualization, and manuscript preparation.

Declarations

- Ethical compliance: The study follows academic and ethical standards.
- Consent to participate/publication: Not applicable.
- Conflict of interest: None declared.
- Funding: No external funding received.
- Data availability: Data were retrieved from the Scopus database.
- Use of AI Tools: Grammarly and Paperpal (Premium) were used only for language refinement and readability improvement.

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