
Trends and Developments in Research on Achievement Motivation in Student Athletes: Bibliometric Analysis

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Abstract

This study examines research trends on achievement motivation among student-athletes using a bibliometric approach. Data were obtained from the Scopus database, resulting in 146 journal articles published between 1982 and 2025. The analysis covered publication trends, citation patterns, journal productivity, and keyword co-occurrence. Results show a significant increase in publications after 2010, with a peak in 2024. Citation analysis reveals that a small number of highly cited studies dominate the field, indicating concentrated academic influence. Keyword mapping identifies major themes such as achievement motivation, sport performance, and student-athletes, with emerging topics related to psychological and contextual factors. This study provides a comprehensive overview of research development and identifies gaps and future research directions in sport psychology.

Keywords: *achievement motivation, student athletes, sport psychology, sport performance, bibliometric analysis.*

INTRODUCTION

In competitive sports, athlete performance is influenced by physical, technical, and psychological factors. Among these, achievement motivation plays a crucial role in shaping athletes' persistence, effort, and performance, particularly for student-athletes who must balance academic and athletic demands (Gould, 2019). Student-athletes differ from general athletes due to their dual roles, requiring effective self-regulation and motivation management (Setyawati et al., 2022). Achievement motivation reflects an individual's drive to achieve goals, overcome challenges, and sustain effort (McClelland, 1985). Previous studies show that highly motivated athletes demonstrate better engagement, resilience, and performance stability (Roberts, 2012; Clancy et al., 2016). Despite extensive research, findings remain fragmented across contexts, methodologies, and

populations. Therefore, a systematic mapping of research trends is needed. This study addresses this gap by applying a bibliometric analysis to examine publication patterns, citation structures, and thematic developments in achievement motivation research among student-athletes from 1982 to 2025.

This study applies bibliometric analysis to answer a number of research questions formulated as follows:

- How has the number of articles published with the keyword “achievement motivation” in student athletes developed from 1982 to 2025?
- What are the most influential articles, authors, and journals in this field based on citation analysis?
- What are the dominant research themes and keyword structures related to achievement motivation in student athletes?

What research gaps and future directions can be identified based on bibliometric mapping?

METHODS

This study applies a bibliometric analysis approach using scientific literature collected from the Scopus database for the period 1982–2025. Scopus was chosen because it is one of the largest and most comprehensive international databases containing reputable publications, including journals that have undergone a rigorous peer-review process. Compared to other databases such as Google Scholar or PsycInfo, Scopus is considered more suitable for this study because it provides more standardized and systematic metadata, enabling more accurate and structured bibliometric analysis.

The search syntax used in the Scopus database was:

Keywords: “motivation, student, achievement, school, sport, athlete”

Search fields: TITLE-ABS-KEY

Language restrictions: English and other languages were not excluded

Document types: Only journal articles were included

Data retrieval date: April 2025

The focus of the study is on journal articles because this type of publication undergoes a rigorous selection and editorial evaluation process, ensuring the quality

of journal article publications. Therefore, other documents such as books and conference papers were excluded from the analysis.

Article Screening Procedure

To ensure that only relevant studies were included in the analysis, a clear screening procedure was followed. Articles were initially filtered based on their title, abstract, and keywords. Only those related to the themes of motivation and achievement in the context of student athletes were retained. The inclusion criteria for the articles were: Published between 1982 – 2025; Articles that focused on student athletes in the context of achievement motivation in sports and education; Full-text availability in the Scopus database. The exclusion criteria were: Articles not directly related to achievement motivation in student athletes; Non-peer-reviewed articles (e.g., editorials, opinions, and short communications); Publications from sources not indexed by Scopus.

Data Analysis Indicators

The data were analyzed using several bibliometric indicators: Citation analysis was conducted to identify the most influential articles, authors, and journals in this field based on the number of citations; Co-occurrence analysis was used to identify the relationships between the most frequent keywords in the collected articles. This method helped in clustering similar topics and themes; Co-authorship analysis was conducted to identify collaboration patterns among authors and the most productive researchers in the field; Keyword clustering was performed using VOSviewer to visualize the thematic networks, identifying dominant and emerging research topics; Thematic mapping was conducted to visualize the development of research topics over time and the interrelationships among different areas of study. By using these methods, the study provides a comprehensive overview of the research trends, citation patterns, and thematic developments regarding achievement motivation in student athletes.

Research Type

The collected journal articles were then analyzed and visualized using three main tools, namely Scopus, VOSviewer, and RStudio. Scopus was used to identify and describe annual publication trends in research discussing achievement motivation in student athletes, including the distribution of articles based on year

of publication. Next, VOSviewer was used to visualize bibliometric maps of keywords and topic categories related to achievement motivation in student athletes, thereby identifying the focus of the study, the interrelationships between topics, and the direction of research development. Meanwhile, RStudio with a bibliometric analysis approach was used to evaluate and analyze citation trends, journal productivity, and the contributions of authors and countries that most frequently discussed the topic of achievement motivation in student athletes. Through a combination of these three analytical tools, this study aims to provide a comprehensive overview of the structure, development, and dynamics of research on achievement motivation in student athletes.

RESULTS

Number of Articles in the Period 1982 to 2025.

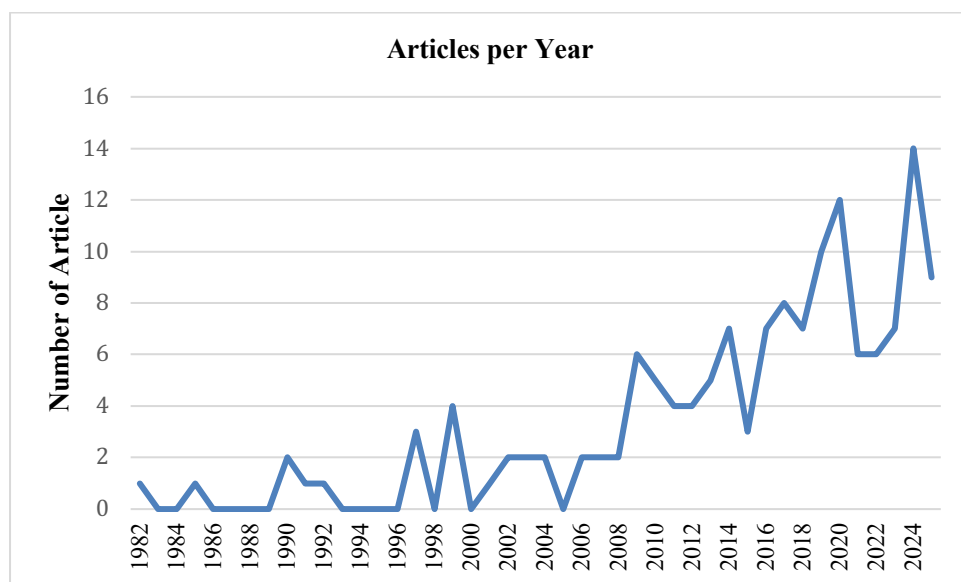


Figure 1. Growth Trend of Annual Publications related to Achievement Motivation in Student Athletes. Source: Scopus Database with Bibliometrics

A total of 146 articles were identified. Publications remained low between 1982–2008 (1–4 articles/year), increased during 2010–2020 (6–12/year), and peaked in 2024 with 14 articles, indicating growing academic interest.

Table 1. Top Most Cited Journal Articles on Achievement Motivation in Student Athletes

No	Author Name	Article Title	Year of Publication	Journal	Total Citations	Citations per year
1	Duda, Joan L, Nicholls, & John G	Dimensions of Achievement Motivation in Schoolwork and Sport	1992	Journal of Educational Psychology	1095	31,29
2	Ntoumanis, Nikos, Biddle & Stuart J.H	Affect and Achievement Goals in Physical Activity: a Meta-Analysis	1999	Scandinavian Journal of Medicine and Sciences in Sports	116	4,14
3	Stoeber, Joachim, Stoll, Oliver, Pescheck, Eva, Otto & Kathleen	Perfectionism and Achievement Goals in Athletes: Relations with Approach and Avoidance Orientations in Mastery and Performance Goals	2008	Psychology of Sport and Exercise	113	5,95
4	Chu, Tsz Lun, Zhang & Tao	Motivational Processes in Sport Education Programs among High School Students: a Systematic Review	2018	European Physical Education Review	100	11,11
5	Digelidis, Nikolaos M, Papaioannou, & Athanasios G	Age-Group Differences in Intrinsic Motivation, Goal Orientations and Perceptions of Athletic Competence, Physical Appearance and Motivational Climate in Greek Physical Education	1999	Scandinavian Journal of Medicine and Sciences in Sports	85	3,04
6	Huéscar, Elisa, Moreno M, Cid, Luis M, Diogo M.T., Rodrigues & Filipie	Passion or Perseverance? The Effect of Perceived Autonomy Support and Grit on Academic Performance in College Students	2020	International Journal of Environmental Research and Public Health	80	11,43
7	Jaakkola, Timo T, Yü P, Sami R, Barkoukis, Vassilis, Liukkonen & Jarmo O	Relationships among Perceived Motivational Climate, Motivational Regulations, Enjoyment, and Participation among Physical Education Students	2015	International Journal of Sport and Exercise Psychology	78	7,80
8	Stuntz, Cheryl P, Weiss, Maureen R	Achievement Goal Orientations and Motivational Outcomes in Youth Sport: The Role Of Social Orientations	2008	Psychology of Sport and Exercise	63	3,50

No	Author Name	Article Title	Year of Publication	Journal	Total Citations	Citations per year
9	Theodosiou, Argiris, Papaioannou & Athanasios G	Motivational Climate, Achievement Goals and Metacognitive Activity in Physical Education and Exercise Involvement in Out of School Settings	2005	Psychology of Sport and Exercise	63	3,00
10	Chazan, Devon J, Pelletier, Gabrielle N, Daniels & Lia M	Achievement Goal Theory Review: An Application To School Psychology	2021	Canadian Journal of School Psychology	49	9,80

Based on Table 1, the ten most-cited articles on achievement motivation in student-athletes show citation counts ranging from 49 to 1095, indicating strong academic influence. The most cited study by Duda and Nicholls (1992) establishes task and ego orientation as the core dimensions of achievement motivation. Task orientation is consistently associated with adaptive outcomes such as intrinsic motivation, engagement, and persistence, whereas ego orientation is more related to social comparison and performance evaluation. Subsequent studies reinforce that task/mastery orientation is the most adaptive motivational pattern, positively influencing emotions, participation, and long-term engagement (Ntoumanis et al., 1999; Chazan et al., 2021). In contrast, performance-oriented climates and avoidance goals tend to produce less stable or maladaptive outcomes.

Achievement motivation is also influenced by individual and contextual factors, including perfectionism (Stoeber et al., 2008), motivational climate, autonomy support, and learning environments (Huéscar et al., 2020; Jaakkola et al., 2015). Evidence shows that mastery-oriented and autonomy-supportive environments significantly enhance motivation, perseverance, and self-regulation. Additionally, several studies highlight that achievement motivation develops through psychological processes involving basic need satisfaction (autonomy, competence, relatedness) and is strengthened through structured interventions such as sport education and goal-setting programs (Chu & Zhang, 2018). These findings confirm that achievement motivation is a multidimensional construct shaped by goal orientation, personality characteristics, and environmental factors, with task/mastery orientation consistently emerging as the most effective foundation for enhancing student-athletes' performance and psychological well-being.

Keyword analysis provides an overview of the main themes and research trends in achievement motivation studies among student athletes. As illustrated in Figure 3, the bibliometric mapping generated using VOSviewer visualizes keyword relationships based on frequency and co-occurrence, where node size reflects occurrence intensity and colors indicate thematic clusters. The analysis identifies four main clusters. The red cluster represents achievement motivation within the educational and school context, emphasizing the role of students, teachers, and learning environments. The green cluster focuses on goal orientation and motivational processes, particularly mastery and performance orientation as key determinants of engagement and persistence. The blue cluster reflects theoretical frameworks, including Achievement Goal Theory and Self-Determination Theory, highlighting the role of motivational climate and basic psychological needs. The yellow cluster represents participant characteristics, indicating that most studies focus on adolescents and high school populations, with variables such as gender and self-efficacy. Overall, the mapping shows that achievement motivation is a central construct linking psychological, educational, and performance domains in student athletes. Current research trends emphasize motivational climate, autonomy support, and engagement, while gaps remain in longitudinal studies and broader developmental populations.

DISCUSSION

The findings confirm that achievement motivation is a key psychological factor in student-athlete performance and engagement. Publication trends show increasing academic attention, particularly after 2010. Achievement Goal Theory remains the dominant framework, with task orientation consistently linked to adaptive outcomes, including intrinsic motivation and persistence. In contrast, ego orientation shows less stable effects. Motivation is shaped by both individual and contextual factors, including perfectionism, autonomy support, and motivational climate. Environments emphasizing mastery and autonomy significantly enhance long-term engagement and performance. However, research gaps remain, particularly in longitudinal studies and intervention-based research. Future studies should integrate motivation with psychological well-being and performance

sustainability. From a practical perspective, coaches and educators should prioritize mastery-oriented climates, autonomy support, and positive learning environments.

CONCLUSION

This study provides a comprehensive bibliometric overview of achievement motivation research in student-athletes, highlighting its increasing importance in sports psychology and education. The novelty lies in the systematic mapping of publication trends, citation structures, and thematic development, offering an integrated understanding of achievement motivation. Practically, motivation should be enhanced through structured interventions emphasizing mastery, autonomy, and psychological support. Future research should adopt longitudinal approaches and broader populations to better understand motivational development.

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