LEISURE MOTOR ACTIVITIES AMONG PREADOLESCENTS – CHARACTERISTICS OF AFFECTIVE LEADERS

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Abstract. *Background*. The motivation for this research stemmed from my interest in understanding the role of leisure motor activities in shaping social interactions and leadership roles among preadolescents. Considering the increasing influence of informal physical activities performed outside the school setting, it becomes important to analyze which sports are most frequently preferred by students and how these preferences correlate with their affective status within the group. The study focused on middle school students and aimed to identify the types of sports they commonly practice during their free time.
Objectives. The main objective of this research was to determine the types of sports preferred by preadolescents during leisure time, emphasizing the differences between affective leaders and their peers in terms of these choices.
Methods. The research methods used were: bibliographic study, observation, experimental, and statistical-mathematical analysis. These methods helped in the interpretation of the experimental results.
Results. The results showed that affective leaders tend to prefer individual and non-contact sports (such as swimming, athletics, cycling, or fitness), while the rest of the group displayed a more diverse orientation that included team sports (football, basketball, handball). The analysis highlights that affective leaders are inclined towards sports involving self-discipline, creativity, and autonomy, as opposed to those requiring direct confrontation or physical contact.
Conclusion: The study underlines that leisure sports preferences differ depending on students' affective roles within their group. Affective leaders mainly orient themselves toward individual, heuristic, and non-contact sports, reflecting a tendency toward independence and self-regulation. These results may serve as a valuable reference for teachers, coaches, and parents in supporting leisure motor activities adapted to the socio-emotional characteristics of children.

Keywords: leisure-time physical activities; affective leadership; sociometric analysis; social-emotional development; motor behaviour in preadolescence.

Introduction

I chose the topic 'Leisure Motor Activities Among Preadolescents – Characteristics of Affective Leaders' because I believe that this stage of childhood is essential for forming social behaviour and relationships among children. During preadolescence, children develop physically, emotionally, and socially. The way they interact with others, especially in leisure contexts, can significantly influence how they will develop as adolescents and adults in the future.

Motor activities carried out outside of classes, in natural and informal environments, provide children with opportunities for free expression and authentic relationship-building. Those who become leaders in such activities often do so not through force or authority, but through calmness, kindness, support, and understanding.

Furthermore, the chosen topic reflects the current trend in educational research: understanding the child as a complex individual with affective, social, and identity needs rather than merely as an executor of motor tasks. Using leisure motor activities to study affective leaders offers an opportunity to reconsider physical education as a means to cultivate character, cooperation, and positive social conduct.

Under these circumstances, leisure and recreational activities are becoming increasingly important from a social and educational perspective. They are no longer seen merely as entertainment; they have become alternative spaces where children learn affection, build genuine social connections, and develop prosocial behaviours. Recent research shows a correlation between frequent participation in informal group physical activities and increased empathy, collaboration, and emotional self-regulation.

Play, movement, and physical activity are essential for children's exploration of the surrounding world. Through movement, children learn to assess their abilities and to interact with both their environment and their peers. Motor skills are developed in social contexts (such as sports clubs), interpersonal contexts (such as free play), and transdisciplinary contexts (such as social skill-building).

However, from the perspective of children and youth, physical activity, play, and sport are among the most common and appreciated leisure activities. In fact, play and sport are the most popular ways for children and young people to spend their free time. Approximately two-thirds of children across Europe are members of sports clubs, meaning that participation in group-based physical activities is widespread among them.

When it comes to sport, children tend to be especially active when playing together with friends, which further highlights the essential role played by the social environment. The study of motor skills represents a key field for specialists and researchers working within the movement sciences, especially when dealing with individuals in their developmental years. This developmental stage – spanning from early childhood (ages 2–7), through middle childhood (8–11), and up to adolescence (12–18) – is considered crucial for the formation and consolidation of motor skills. However, these abilities are often difficult to measure objectively, particularly in the case of coordinative motor skills. Their development is closely linked to the maturation processes of the nervous and musculoskeletal systems, as well as to the hormonal transformations specific to this age.

Motor competence is strongly associated with health and academic performance among developing children. At the same time, physical development and maturation lead to a variety of changes in motor competence. In some cases, these changes may appear detrimental, causing a temporary decrease in motor ability. However, in other cases, motor skills gradually improve as children grow. These developmental phases can be challenging, and variations in motor abilities and competence are often difficult to identify precisely. Numerous qualitative tools are used to assess movement skills, with the most frequently examined movements including running, jumping, and throwing – all of which serve as indicators of fundamental motor skill proficiency.

Research methodology

The research objectives are:
- To identify the types of leisure motor activities practised by middle school students.
- To highlight the most preferred leisure motor activities among preadolescents.
- To compare groups according to their preferred types of sports.

Research hypothesis
- There is a significant association between the type of sport practised as a leisure motor activity and the Sociometric Preference Index (SPI).

Measures

In this study, the sociometric method was applied based on affective criteria (friendship, sympathy, and emotional preference) rather than reputational factors. The theoretical framework guiding this approach aimed to identify those students who were most emotionally appreciated by their peers. Using this method allowed the identification of the relational networks within each class group, with the main objective of establishing each participant's sociometric status, categorized as very popular (VP), popular (P), accepted (A), neglected (N), controversial (C), or rejected (R).

To collect the data, students were asked to respond to two open-ended questions:

1. "If you could invite three classmates to a personal event (for example, your birthday), whom would you choose?"
2. "If you were to organize a similar event, which three classmates would you not invite?"

The responses were transformed into differentiated numerical values according to the order of selection. The first classmate mentioned received +3 points, the second +2, and the third +1 point. Likewise, for negative nominations, the scores were –3, –2, and –1 point, respectively. Based on these results, a sociomatrix was created for each class, and for every student, the Preferential Status Index (PSI) was calculated using the following formula:

PSI = (Number of positive choices – Number of negative choices) / (N – 1), where N represents the total number of students in the class.

Procedure

The study took place in Bucharest, Romania, between November 2024 and April 2025, and included students enrolled in lower secondary education. Data collection was carried out directly by one of the authors during school hours. The peer nomination technique, which consists of asking students to indicate classmates they like or dislike, is one of the most widely used methods for assessing sociometric status due to its practical application and ease of understanding for participants.

Subjects and research site

This study sample comprised 92 preadolescents (44 female and 48 male students) aged between 10 and 16 years, all without special educational requirements. Participants were distributed across three fifth-grade, two sixth-grade, two seventh-grade, and one eighth-grade class.

For each class, the Sociometric Preference Index (SPI) was calculated individually for every student.
The interpretation of SPI values was established according to the following scale:

- Score > 0.5 – very popular student;
- Score between 0.2 and 0.5 – popular student;
- Score between 0 and 0.2 – accepted student;
- Score = 0 – controversial or indifferent student (in this study, four students scored 0, being considered controversial as they were chosen and rejected equally by peers);
- Negative score – student rejected by the group (in terms of affective relationships or sympathy).

Two examples of sociomatrices are presented (for a fifth-grade class and a seventh-grade class), showing each student's Sociometric Preference Index (SPI). Students with green are very popular, those in grey are popular, yellow indicates accepted students, and those with negative values represent the rejected members of the group.

Sociometric Matrix – 7th Grade Class

	1	2	3	4	5	6	7	8	9	10	11	12	13
	+3	+2	+1		-3	-2	-1						
	+1	+3	-2		-3	-1					+2		
		-3					+2	+3	+1			-2	-1
		-3	+2	+1					+3			-2	-1
	+1	+3			-2	-1	-3		+2				
			+3	+2			-3	+1	-2	-1			
	+3	-2					+2		+1			-3	-1
			+3		+2		-3	+1	-2			-1	
		-3		+2	+3				+1	-1		-2	
A b/v	4/8	3/8	4/9	3/5	2/5	0	2/4	3/5	5/8	0	1/2	0	0
R b/v	0	4/11	2/2	0	3/8	3/4	4/10	0	2/4	2/2	0	5/10	3/3
I.S.P.	0,66	-0,25	0,58	0,41	-0,25	-0,33	-0,5	0,41	0,33	-0,16	0,16	-0,83	-0,25

	1	2	3	4	5	6	7	8	9	10	11	12
	+3	+2	+1	-3	-2		-1					
	-3			+2	-2	+3	-1		+1			
	+3	+1			-3		-2	+2		-1		
			+3	-2			-3	+2	-1	+1		
	-3			+2		+3				-2	+1	-1
	+2		+1				-2	+3				-1
	+3	+1	+2		-3		-2			-1		
				+2	-3	+3	-2		+1			-1
	+1		+2		-3		-2	+3			-1	
			+3	-2			-1		+2		+1	-3
A b/v	5/12	3/4	5/9	4/9	0	3/9	0	4/10	3/4	1/1	2/2	0
R b/v	2/6	0	0	2/5	8/21	0	9/16	0	1/1	3/4	1/1	4/6
I.S.P.	0,54	0,36	0,81	0,36	-1,90	0,81	-1,45	0,90	0,27	-0,27	0,09	-0,54

Sociometric Matrix – 7th Grade Class

Organisation of research

In the first phase, extreme values were investigated, and one participant was excluded from the study. Using the Kruskal–Wallis H test, we examined whether there were significant differences between very popular, popular, accepted, controversial, and rejected students.

Due to the small number of controversial students (with SPI = 0), they were grouped together with the accepted students (SPI between 0 and 0.2) for statistical analysis.

Table 1.1. Descriptive statistics – preference for heuristic and algorithmic sports

	SPI	Heuristic	Algorithmic
N	Very popular	18	18
	Popular	23	23
	Accepted and Controversial	17	17
	Rejected	33	33
Mean	Very popular	29.5	30.1
	Popular	36.0	35.7
	Accepted and Controversial	35.0	36.2
	Rejected	34.1	36.0

As shown in Table 1.1, compared to the very popular students, those classified as popular, accepted, controversial, or rejected exhibited a higher level of interest in both algorithmic and heuristic sports. This tendency is reflected by the higher mean values obtained in these categories for both sport types, suggesting a broader openness toward participating in diverse and structured motor activities, regardless of their sociometric status.
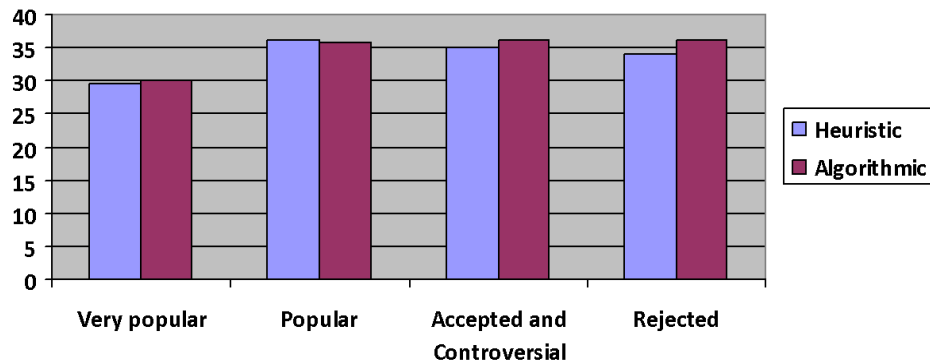

Figure 1.1. Preferred sports among students – heuristic and algorithmic.

Table 1.2. Descriptive statistics – preference for individual and team sports

	SPI	Team sports	Individual sports
N	Very popular	18	18
	Popular	23	23
	Accepted and Controversial	17	17
	Rejected	33	33
Mean	Very popular	25.9	27.8
	Popular	35.3	33.6
	Accepted and Controversial	30.4	34.4
	Rejected	30.7	34.7

As presented in Table 1.2, students classified as popular, accepted, controversial, and rejected expressed an increased interest in both team and individual sports. Regardless of their position within the group's relational hierarchy, the higher mean values recorded for these categories suggest a greater willingness and motivation to engage in such motor activities.
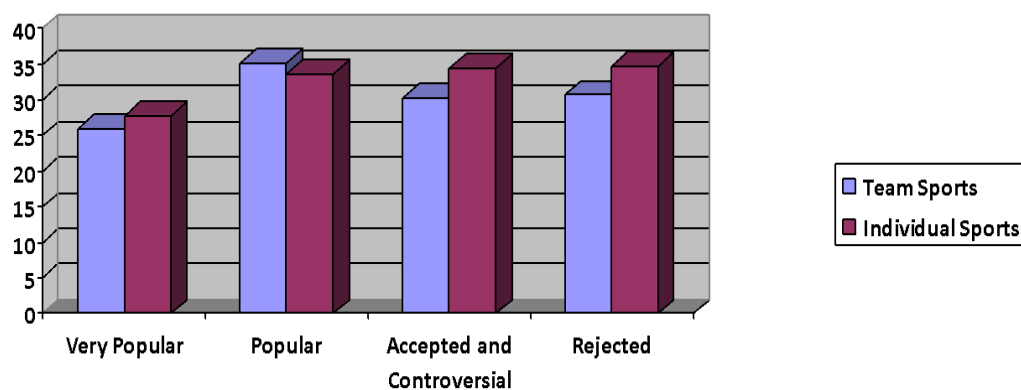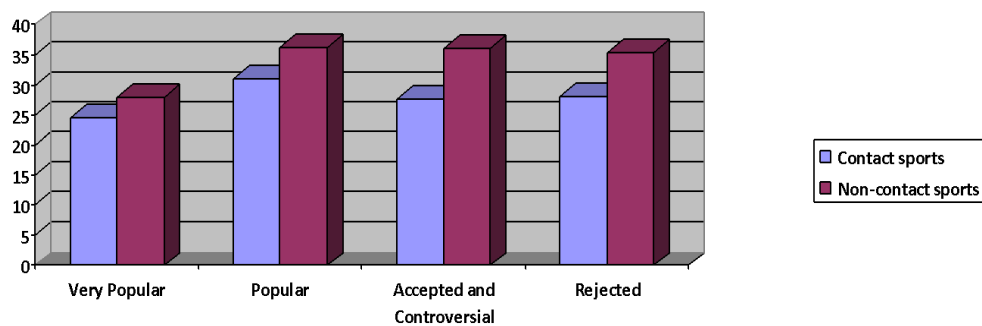

Figure 1.2. Preferred sports among students – individual and team sports.

Table 1.3. Descriptive statistics – preference for contact and non-contact sports

	SPI	Contact sports	Non-contact sports
N	Very popular	18	18
	Popular	23	23
	Accepted and Controversial	17	17
	Rejected	33	33
Mean	Very popular	24.5	27.9
	Popular	31.1	36.2
	Accepted and Controversial	27.6	36.0
	Rejected	28.1	35.4

As indicated in Table 1.3, students categorized as popular, accepted, controversial, and rejected demonstrated a stronger preference for non-contact sports, while maintaining a moderate interest in contact activities. This pattern suggests that a lower sociometric status may be linked to a broader openness toward various forms of physical engagement, including activities involving direct physical interaction with opponents.

Figure 1.3. Preferred sports among students – contact and non-contact sports.

Based on the descriptive indicators presented above, the following analysis explores statistically significant differences among groups using the Kruskal–Wallis test.

Table 1.4. Kruskal–Wallis test results for comparing preferences across sport categories by sociometric status (SPI)

	χ^2	df	p	ε^2
Heuristic	6.99	3	0.072	0.0777
Algorithmic	5.67	3	0.129	0.0630
Team sports	10.66	3	0.014	0.1184
Individual sports	7.36	3	0.061	0.0817
Contact sports	4.17	3	0.243	0.0464
Non-contact sports	7.74	3	0.052	0.0860

As shown in Table 1.4, the Kruskal–Wallis H test was applied to determine whether there were statistically significant differences in sport preferences among students with different sociometric statuses (SPI categories).

The results indicate that there was a significant difference between groups only for team sports (χ^2 = 10.66, p = 0.014, ε^2 = 0.1184), suggesting that sociometric status had a measurable influence on students' preference for this sport type. In other words, students' position within the group's social hierarchy affected their inclination toward team-based activities such as football, basketball, or handball.

For the other categories–heuristic sports (p = 0.072), individual sports (p = 0.061), and non-contact sports (p = 0.052)–the values approached the threshold of statistical significance, indicating a trend toward meaningful differences, but not strong enough to be conclusive at the conventional p < 0.05 level. These marginal results may still suggest that certain sociometric profiles (e.g., popular or accepted students) tend to be more open to such activities compared to others.

Table 1.5. Pairwise comparisons – heuristic sports

		W	p
Very popular	Popular	-3.573	0.056
Very popular	Accepted and Controversial	-2.643	0.242
Very popular	Rejected	-2.693	0.226
Popular	Accepted and Controversial	-0.194	0.999
Popular	Rejected	1.309	0.791
Accepted and Controversial	Rejected	0.856	0.931

According to Table 1.5, a marginally significant difference (p = 0.056) can be observed between very popular and popular students regarding their interest in heuristic sports (such as tennis, badminton, football, etc.). This result suggests that popular students show significantly greater interest in these types of activities compared to very popular students. The difference may be attributed to the fact that a higher percentage of very popular students already engage in leisure motor activities that include heuristic sports, which may reduce their perception of novelty or attractiveness. Therefore, popular students appear to express a stronger appreciation for these activities, reflecting a higher motivation to participate in sports that promote tactical thinking, cooperation, and adaptability – key characteristics of heuristic motor activities.

Table 1.6. Pairwise comparisons – algorithmic sports

		W	p
Very popular	Popular	-2.399	0.326
Very popular	Accepted and Controversial	-2.879	0.175
Very popular	Rejected	-3.099	0.126
Popular	Accepted and Controversial	-0.194	0.999
Popular	Rejected	-0.295	0.997
Accepted and Controversial	Rejected	0.247	0.998

According to Table 1.6, there are no statistically significant differences (p > 0.05) between student categories regarding their preferences for algorithmic sports. The results indicate homogeneous preferences, suggesting that structured activities with clear rules are equally valued by all students.

Table 1.7. Pairwise comparisons – individual sports

		W	p
Very popular	Popular	-1.993	0.494
Very popular	Accepted and Controversial	-3.159	0.114
Very popular	Rejected	-3.744	0.041
Popular	Accepted and Controversial	-0.872	0.927
Popular	Rejected	-1.109	0.862
Accepted and Controversial	Rejected	-0.378	0.993

According to Table 1.7, a statistically significant difference (p = 0.041) was found between very popular and rejected students regarding their preference for individual sports. Rejected students show a greater interest in such activities (e.g., athletics, tennis, swimming), possibly viewing them as means of personal expression and achievement outside direct social interactions.

Table 1.8. Pairwise comparisons – team sports

		W	p
Very popular	Popular	-4.034	0.023
Very popular	Accepted and Controversial	-2.220	0.396
Very popular	Rejected	-2.836	0.186
Popular	Accepted and Controversial	2.578	0.263
Popular	Rejected	2.749	0.210
Accepted and Controversial	Rejected	-0.203	0.999

The analysis shown in Table 1.8 highlights a statistically significant difference (p = 0.023) between very popular and popular students regarding their preferences for team sports. Popular students demonstrate a stronger interest in activities such as football, handball, and basketball, likely due to a greater motivation for group involvement, while very popular students are already actively engaged in such sports during their leisure time.

Table 1.9. Pairwise comparisons – contact sports

		W	p
Very popular	Popular	–2.7892	0.199
Very popular	Accepted and Controversial	–1.3317	0.782
Very popular	Rejected	–1.8704	0.549
Popular	Accepted and Controversial	1.3549	0.773
Popular	Rejected	1.4617	0.730
Accepted and Controversial	Rejected	–0.0725	1.000

As shown in Table 1.9, there are no statistically significant differences (p > 0.05) among student categories regarding their preferences for contact sports. The high p-values indicate a uniform level of interest, regardless of sociometric status – very popular, popular, accepted, controversial, or rejected.

Table 1.10. Pairwise comparisons – non-contact sports

		W	p
Very popular	Popular	-3.218	0.104
Very popular	Accepted and Controversial	-3.296	0.091
Very popular	Rejected	-3.292	0.092
Popular	Accepted and Controversial	-0.155	1.000
Popular	Rejected	0.236	0.998
Accepted and Controversial	Rejected	0.827	0.937

The analysis in Table 1.10 shows that no statistically significant differences ($p > 0.05$) were found among student categories regarding their preferences for non-contact sports. Although popular, accepted, controversial, and rejected students recorded slightly higher scores than very popular ones, these differences do not reach statistical significance. Consequently, interest in activities such as running, swimming, or table tennis is evenly distributed across all sociometric categories.

Discussions

The findings of this research highlight the importance of social interactions and affective roles within preadolescent peer groups, showing that preferences for leisure motor activities are influenced not only by individual motivation but also by the relational structure of the group. Although statistically significant differences were observed only for team sports, the overall trends suggest that sociometric status indirectly shapes students' attitudes toward physical activity and group participation. Students with a high sociometric status (very popular and popular) displayed a stronger preference for activities based on cooperation and interdependence, where communication, mutual support, and social recognition provide emotional satisfaction and reinforce their social position.

At the same time, these students tend to favor activities that allow emotional control, autonomy, and self-regulation, such as heuristic or individual sports, which emphasize strategic thinking and personal responsibility. Students with lower sociometric status (accepted, controversial, or rejected) showed greater openness toward a wider variety of activities, possibly as a means of achieving social inclusion and recognition within their group. For them, sports and leisure motor activities may function as a mechanism of social reintegration, offering opportunities for self-expression and confidence building in non-competitive environments. These interpretations are consistent with previous studies by Andersen et al. (2021) and Jones et al. (2020), who emphasized that regular participation in physical activities positively contributes to social-emotional development and prosocial behavior among children. Similarly, Bolter and Kipp (2018) noted that group-based physical activities enhance cooperation, empathy, and the assumption of positive social roles. It is noteworthy that, although significant differences were found primarily for team sports, the relatively small variation across categories indicates a general balance in attitudes toward physical activity.

Regardless of sociometric position, most students expressed consistent interest in leisure-time motor activities, reinforcing the idea that movement, play, and group belonging are fundamental developmental needs during preadolescence. From an educational perspective, these findings highlight the need for physical education teachers and coaches to tailor motor activities to the socio-affective profiles of their students. Understanding the relationship between sociometric status and activity preferences can help educators design inclusive and engaging environments that encourage participation, cooperation, and social growth for all students, regardless of their popularity or group position.

Conclusions

The present study aimed primarily to analyse the relationship between leisure motor activities and the sociometric dynamics within groups of preadolescents. The conclusions presented below summarise the essential elements of the research, particularly those derived from the statistical interpretation of the data. The results indicate that an affective leader predominantly prefers individual, heuristic sports (which require creativity, an active opponent, and/or a variable environment), and non-contact sports. Therefore, preadolescents with a favourable sociometric status are generally associated with sports such as tennis, badminton, and skateboarding.

At the same time, it should be noted that an affective leader is not characterised by the desire for fame or popularity, but rather by the ability to build emotional connections, to support group members, and to set an example of behaviour grounded in balance, calmness, and empathy.

This study also revealed several interesting nuances. For example, popular students were significantly more interested in heuristic sports (such as tennis, badminton, or football) than very popular students. This difference may be attributed to the fact that a higher percentage of very popular students already participate in leisure motor activities that include heuristic sports. Consequently, popular students seem to show a stronger appreciation for this type of activity.

Likewise, popular students expressed a significantly higher preference for participation in team sports such as football, handball, or basketball compared to very popular students. This difference can also be explained by the fact that many very popular students are already regularly involved in leisure motor activities that include team sports, whereas popular students seem to express a greater desire to participate in such activities.

Furthermore, rejected students showed a significantly greater preference for individual sports such as athletics, tennis, or swimming compared to very popular students. This difference may be explained by the fact that a larger proportion of very popular students (compared to rejected students) already practise individual sports as part of their leisure motor activities. Thus, rejected students may perceive individual sports as a form of personal expression and an opportunity for achievement with direct implications for their social interactions.

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