



## THE IMPACT OF SPORTS TRAINING ON ATHLETE MOTIVATION

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### Abstract:

This study aimed to examine the effect of sports training on student motivation. A total of 318 students (166 male and 152 female) enrolled in the Faculty of Sports Sciences participated in the research. The *Motivation in Sports Scale-SSI* was employed as the primary data collection instrument. Data were analyzed using an independent samples t-test, one-way ANOVA, and LSD post hoc tests. Statistical analysis revealed a significant difference between male and female participants in terms of height and body weight ( $p < 0.001$ ). However, no significant difference was found between male and female students in overall motivational orientation scores ( $p > 0.05$ ). When motivational orientation subscale scores were compared based on participants' involvement in sports, a significant difference was observed between students who did not actively participate in competitions and those who were involved in either team or individual sports ( $p < 0.05$ ). No significant differences were identified in intrinsic or extrinsic motivation levels of student-athletes based on gender ( $p > 0.05$ ). Conclusion: The findings indicate that motivation levels among students receiving sports education do not differ significantly by gender. However, students who are actively involved in competitive sports—whether in team or individual formats—demonstrate higher motivation levels compared to their non-competing peers. These results suggest that active participation in sports positively influences motivation and may reduce levels of amotivation. Future research is recommended with larger and more diverse sample groups representing various levels of athletic engagement.

**Keywords:** sports training, motivation, amotivation, student athletes, competitive

### 1. Introduction

Motivation is one of the key psychological factors that influence individuals' continued engagement in various activities, including sports. Defined as the force that drives

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behavior (Aydın, 2010), motivation represents the direction and intensity of effort toward a goal. It encompasses the desire to achieve a specific outcome and the orientation of behavior toward that outcome (Balçioğlu, 2003). In the field of sports, motivation is closely intertwined with athletic performance, as it underpins an athlete's commitment, persistence, and overall engagement. Motivation in sports contexts has been widely studied, with scholars emphasizing its role in regulating, directing, and sustaining achievement behavior (Roberts, Treasure, & Conroy, 2007). Hagger and Chatzisarantis (2007) further conceptualize motivation as a process that drives, guides, and reinforces behavior. Within this framework, two primary types of motivation are commonly identified: intrinsic and extrinsic. Intrinsic motivation originates from within the individual and is characterized by engaging in activities for the inherent satisfaction and enjoyment they provide (Deci & Ryan, 1985). Athletes with high intrinsic motivation are driven by internal desires such as learning new skills, achieving personal goals, and attaining a sense of competence and self-fulfillment (Doğan, 2005). These individuals pursue their goals with enthusiasm, often independent of external validation or rewards. Extrinsic motivation, in contrast, arises from external influences, such as rewards, recognition, or pressure from coaches and peers (Lonsdale, Hodge, & Rose, 2008). This form of motivation is shaped by tangible incentives (e.g., medals, trophies) or intangible rewards (e.g., praise, approval), and individuals participate in activities to achieve outcomes distinct from the activity itself (Konter, 1995; Şad & Gürbüzürk, 2009). According to Cognitive Evaluation Theory, motivation can be further categorized into three distinct forms: intrinsic motivation, extrinsic motivation, and amotivation—the latter referring to a lack of motivation resulting from an inability to perceive a link between behavior and outcomes (Kazak, 2004; Moralı *et al.*, 2004; Pelletier *et al.*, 1992). Individuals experiencing amotivation often feel helpless or inadequate, and may exhibit low levels of engagement and performance (Turhan & Ağaoğlu, 2011).

The literature suggests that intrinsic motivation is generally more effective in sustaining long-term engagement and performance in sports compared to extrinsic motivation (Şanlı, 2015). Moreover, unmotivated individuals—those experiencing amotivation—tend to lack both internal and external drives, leading to reduced goal orientation and performance outcomes (Deci & Ryan, 1985). Research also indicates that sports participation positively impacts students' psychological states, including motivation and overall well-being (Bıyık & İmamoğlu, 2023; Uzun *et al.*, 2017; Yamaner *et al.*, 2018; Yamaner *et al.*, 2020). Given the crucial role of motivation in athletic performance and personal development, understanding its determinants is essential. Notably, the level of sports participation—whether competitive or recreational—may influence motivational outcomes. Furthermore, individual factors such as gender and the type of sport may also shape motivational dynamics.

This study aims to investigate the effect of sports training on the motivation of university students enrolled in sports sciences programs. Specifically, it examines whether motivational differences exist based on gender and the type of sports branch (team vs. individual) in which students actively participate. By exploring these variables,

the study seeks to contribute to a deeper understanding of how sports training and participation influence intrinsic and extrinsic motivation, as well as the presence or absence of amotivation among student athletes.

## 2. Method

### 2.1 Research Group

The study sample consisted of a total of 318 student-athletes ( $n = 318$ ), including 166 males and 152 females, enrolled in the Faculty of Sports Sciences. Participants were actively involved in individual and/or team sports disciplines and volunteered to participate in the research. The selection criteria ensured that all participants had experience in sports training as part of their academic curriculum and extracurricular activities. Participation in the study was entirely voluntary, and informed consent was obtained from all individuals prior to data collection.

### 2.2 Data Collection Tool

To assess the participants' levels of motivation, the Sports Motivation Scale (SMS), originally developed by Pelletier, Fortier, Vallerand, and Tuson (1995) and grounded in Cognitive Evaluation Theory, was utilized. The scale was adapted into Turkish and validated for Turkish-speaking athlete populations by Kazak (2004), demonstrating strong psychometric properties. The SMS consists of 28 items, rated on a seven-point Likert-type scale (ranging from 1 = "Strongly Disagree" to 7 = "Strongly Agree"). The instrument evaluates seven sub-dimensions of motivation:

- 1) Intrinsic Motivation to Know,
- 2) Intrinsic Motivation to Accomplish,
- 3) Intrinsic Motivation to Experience Stimulation,
- 4) External Regulation,
- 5) Introjection,
- 6) Identification,
- 7) Amotivation.

The first three subscales represent components of intrinsic motivation, while the subsequent three subscales (external regulation, introjection, and identification) assess extrinsic motivation. The amotivation subscale evaluates the absence or lack of motivation. Scoring was conducted by calculating the mean item score for each subscale, as described by Kazak (2004). Similarly, general scores for intrinsic and extrinsic motivation were obtained by averaging the relevant subscale scores. In the current study, the internal consistency of the SMS was evaluated using Cronbach's alpha coefficients, which indicated acceptable to high reliability across most subscales: Intrinsic Motivation to Know:  $\alpha = .89$ , Intrinsic Motivation to Experience Stimulation:  $\alpha = .72$ , Introjection:  $\alpha = .60$ , Identification:  $\alpha = .78$ , External Regulation:  $\alpha = .84$ , and Amotivation:  $\alpha = .79$

## 2.3 Data Collection Procedure

The scale was administered in person to student-athletes during the academic semester. Participants were briefed on the purpose of the research and completed the questionnaire individually under the supervision of the researchers. Participation was anonymous and conducted in compliance with ethical standards for social science research. Athletes from both individual and team sports backgrounds were included to ensure diversity in the sample.

## 2.4 Data Analysis

The data were analyzed using IBM SPSS Statistics Version 25.0. First, the suitability of the data for parametric analysis was tested using the Kolmogorov–Smirnov test, which confirmed that all data conformed to a normal distribution. Subsequently, the following statistical tests were employed to analyze differences between groups: Independent samples t-test: to compare motivational scores by gender. One-way Analysis of Variance (ANOVA): to examine differences based on type of sport participation (team, individual, or non-competitive). Least Significant Difference (LSD) post hoc test: applied when significant differences were found in ANOVA to determine the specific group differences. All statistical analyses were conducted at a 95% confidence level, with  $p < .05$  considered indicative of statistical significance.

## 3. Results

**Table 1:** Comparison of Age, Height, and Body Weight by Gender

	Sex	N	Mean	St. deviation	t-test
Age (years)	Male	166	22.27	1.20	-0.19
	Female	152	22.30	1.42	
Height (cm)	Male	166	174.79	4.97	6.43**
	Female	152	164.52	4.67	
Body weight (kg)	Male	166	71.92	4.86	5.12**
	Female	152	58.10	4.76	

\*\* $p < .001$

A statistically significant difference was observed between male and female participants in terms of height and body weight ( $p < .001$ ), indicating gender-based variations in these anthropometric characteristics.

**Table 2:** Comparison of Motivational Orientation  
Subscale Scores Between Male and Female Sports Students

Motivational Orientation in Sports	Sex	N	Mean	St. deviation	t- test
Intrinsic motivation to know and achieve	Male	166	5.63	1.12	-0.93
	Female	152	5.85	1.10	
Intrinsic motivation to experience stimulation	Male	166	5.83	1.08	-0.99
	Female	152	6.05	1.06	
Extrinsic motivation for extrinsic	Male	166	4.55	1.32	-1.31
	Female	152	4.96	1.32	

Introjection extrinsic motivation	Male	166	4.88	1.22	-0.63
	Female	152	4.96	1.17	
Extrinsic motivation for identification	Male	166	5.66	1.12	-0.69
	Female	152	5.81	1.13	
Amotivation	Male	166	2.86	1.45	2.32
	Female	152	2.06	1.95	

\*p<0.05

No statistically significant differences were found between male and female students in any of the motivational orientation subscale scores, including the amotivation subscale ( $p > .05$ ), indicating that gender did not have a significant effect on the motivational dimensions assessed.

**Table 3:** Comparison of Motivational Orientation  
Subscale Scores According to Sports Interest Status

Motivational Orientation in Sports	Branch	N	Mean	St. deviation	F/LSD
Intrinsic motivation to know and achieve	Team sport (1)	111	5.97	1.23	2.98* 1.2>3
	Individual sports (2)	115	5.89	1.12	
	Not actively competing (3)	92	5.26	10.12	
Intrinsic motivation to experience stimulation	Team sport (1)	111	6.06	10.13	2.99* 1.2>3
	Individual sports (2)	115	6.08	1.14	
	Not actively competing (3)	92	5.58	1.21	
Extrinsic motivation for extrinsic	Team sport (1)	111	4.81	1.23	2.95* 1.2>3
	Individual sports (2)	115	4.82	1.41	
	Not actively competing (3)	92	4.44	1.31	
Introjection extrinsic motivation	Team sport (1)	111	5.20	1.23	3.02* 1.2>3
	Individual sports (2)	115	5.19	1.19	
	Not actively competing (3)	92	4.34	1.27	
Extrinsic motivation for identification	Team sport (1)	111	5.80	1.22	3.08* 1.2>3
	Individual sports (2)	115	5.79	1.13	
	Not actively competing (3)	92	5.52	1.27	
Amotivation	Team sport (1)	111	2.30	1.22	3.13* 1.2<3
	Individual sports (2)	115	2.36	1.22	
	Not actively competing (3)	92	3.07	1.29	

\*p<0.05

A statistically significant difference was found in the motivational orientation subscale scores based on participants' level of involvement in sports. Specifically, athletes who actively participated in team and individual sports demonstrated significantly higher motivation scores compared to those who did not engage in competitive sports ( $p < .05$ ).

**Table 4:** Intrinsic and extrinsic motivation states  
of student athletes according to gender differences

Variable	Sex	Mean	St. deviation	t
Intrinsic motivation sub-dimension	Male	5.70	1.13	-0.92
	Female	5.92	1.13	
Extrinsic motivation sub-dimension	Male	5.03	1.12	-0.93
	Female	5.25	1.12	

No statistically significant differences were observed in the intrinsic and extrinsic motivation levels of student-athletes based on gender ( $p > .05$ ), indicating that gender did not influence these dimensions of motivation.

#### 4. Discussion

In a study conducted by Ersöz *et al.* (2012), no significant gender-based differences were identified in athletes' motivational orientations; however, a statistically significant difference was observed based on the type of sport practiced. In contrast, Uzun *et al.* (2018) reported significant gender differences in several motivational sub-dimensions, including intrinsic motivation to know and accomplish, introjected regulation, identified regulation, and amotivation, suggesting that motivational profiles may vary by gender under certain conditions. Similarly, Amorose and Horn (2000) found that male athletes exhibited higher levels of intrinsic motivation compared to female athletes, while Kingston *et al.* (2006) identified that males had significantly higher scores on the external regulation subscale. These findings are consistent with earlier studies by Pelletier *et al.* (1995) and Petherick and Weigand (2002), which also reported gender-related differences in motivational constructs. In contrast to some of the aforementioned studies, the current research did not identify any statistically significant differences between male and female students in any of the motivational orientation subscale scores ( $p > .05$ ). This result aligns with the findings of Ersöz *et al.* (2012), suggesting that gender may not universally influence motivational orientation among athletes in all contexts. This result is in line with the findings of Kelecek (2013), who also reported that this sub-dimension yielded the highest average score among participants. Conversely, the lowest mean score in our study was observed in the amotivation subscale, indicating a generally high level of engagement and purposefulness among the participants, consistent with Kelecek's results. Previous literature supports the notion that athletes are driven by both intrinsic and extrinsic motivational factors. For instance, Bakker (1993) emphasized that athletes often participate in sports due to internal drivers such as enjoyment, personal challenge, and the desire for mastery. Furthermore, intrinsic motives such as enjoyment, competition, and self-improvement have been shown to play a pivotal role in sustaining long-term commitment to sport. In contrast, extrinsic motives—such as body image concerns, social recognition, and material rewards—are generally more influential during the initial phases of participation, but may not sustain long-term involvement (Tiryaki, 2000). The current study contributes to the existing body of knowledge by

confirming that intrinsic motivation, particularly the desire for stimulation and enjoyment, remains a central factor in the sporting experiences of university athletes. Additionally, gender differences in motivation may be context-dependent and influenced by variables such as sport type, competitive level, and cultural setting.

Tazegül (2013) reported that motivation levels among boxers are notably high, highlighting the strong intrinsic engagement observed in combat sports. Similarly, Ersöz *et al.* (2012) identified significant differences in the motivational orientations of athletes, particularly in the “experiencing the stimulus” sub-dimension, contingent upon the type of sport practiced. Specifically, individuals participating in team sports demonstrated higher mean scores on this subscale compared to those involved in individual sports. The concept of intrinsic motivation to experience stimuli encompasses participation driven by the desire to encounter enjoyment and various stimulating sensations, including aesthetic appreciation, sensory pleasure, excitement, and entertainment (Kazak-Çetinkalp, 2009). Şanlı (2015) evaluated the motivation subscale scores of 314 male students engaged in both individual and team sports, reporting values ranging between 13.02 and 35.95 across different motivational subscales. Comparable research by Erdem (2008) on American football athletes found subscale scores ranging from 2.26 to 5.40, while Zişan *et al.* (2004) reported a similar range between 2.34 and 5.36. Kelecek *et al.* (2010) observed subscale scores between 2.42 and 5.33 in volleyball players. The present study's results, with subscale scores ranging from 2.25 to 5.96, fall within these established intervals, with Kelecek *et al.*'s findings slightly exceeding those of Erdem (2008). When comparing motivational orientation subscale scores based on sports involvement, a statistically significant difference emerged between athletes who actively participate in competitions (both team and individual sports) and those who only receive sports training without engaging in competition ( $p < .05$ ). Specifically, students actively competing in sports exhibited higher motivation scores across most subscales—except for amotivation—than their non-competing peers. Additionally, motivation levels were comparable between team and individual sport participants, which may be attributed to the structured sports training all students receive. This finding aligns with previous literature suggesting that participation in organized sport enhances motivation irrespective of sport type (Ersöz *et al.*, 2012). Beyond motivation, regular physical activity has been shown to mitigate stress levels, contributing to psychological well-being (Deryahanoğlu *et al.*, 2016). Moreover, factors influencing participation in recreational activities among sedentary women have been identified, including marital status, place of residence, availability of leisure time, and challenges in utilizing free time effectively (Yaşartürk *et al.*, 2016).

Comparative analyses by Almagro, Sáenz-López, and Moreno (2010) between football and basketball players revealed that basketball athletes demonstrated more self-determined behaviors in sports settings, with significantly higher scores on internal regulation sub-dimensions such as intrinsic motivation to know and achieve. These differences may be explained by athletes' excitement toward their sport, perceived personal competence, curiosity, and the desire for learning and mastery—factors which

enhance intrinsic motivation by fostering pleasure and engagement during training and competition (Kazak, 2004). Such elements likely contribute to the relatively higher motivation scores observed in this study compared to previous research. Extensive empirical evidence underscores the beneficial impact of regular physical activity on overall well-being and health (Atan *et al.*, 2012). Furthermore, multiple studies have reported positive effects of sports participation on the personality development of university students (Akyol & İmamoğlu, 2019; Yamak *et al.*, 2016; Yazıcı, 2023), reinforcing the role of sports as a crucial factor in holistic student development.

In the present study, no statistically significant differences were observed between male and female student-athletes regarding intrinsic and extrinsic motivation levels ( $p > .05$ ). This finding suggests that gender may not be a determining factor for motivational orientation among students actively engaged in sports education and training. One plausible explanation for this lack of gender disparity is the shared context of structured sports participation and formalized training, which may homogenize motivational profiles across genders. Supporting this interpretation, Ersöz *et al.* (2012) similarly reported no gender-based differences in motivational orientations among athletes, emphasizing that the sport environment and training context might mitigate traditional gender differences. Conversely, some studies have found gender differences in motivation, with males exhibiting higher intrinsic motivation (Amorose & Horn, 2000) or greater external regulation (Kingston *et al.*, 2006). However, these discrepancies may arise from differences in sample characteristics, competitive levels, or cultural factors. Furthermore, the similarity in motivation across genders in this study aligns with Deci and Ryan's (1985) self-determination theory, which posits that intrinsic motivation is largely influenced by contextual factors such as autonomy support, competence, and relatedness. These elements can be equally nurtured in a well-structured sports training environment regardless of gender. Participation in sports training provides athletes with opportunities for mastery, social affiliation, and goal achievement, which may contribute to similar motivational states among male and female students. Moreover, Uzun *et al.* (2018) noted that gender differences in motivation tend to be more pronounced in unstructured or recreational contexts but diminish in competitive and training-focused settings. This underscores the potential role of sport-specific experiences and the nature of engagement in shaping motivation, rather than gender alone. In conclusion, the findings highlight the importance of the training environment and active participation in sports as equalizing factors in motivational orientation. Future research should explore how these contextual influences interact with gender across different levels of sport involvement and cultural backgrounds to deepen understanding of motivation in athletic populations.

In conclusion, the findings of this study indicate that motivation scores among students receiving sports education do not significantly differ by gender. However, students who not only receive sports training but also actively participate in competitive events within their respective sports demonstrate significantly higher levels of motivation compared to their peers who engage in training without competition



involvement. These results suggest that active competition enhances motivational engagement beyond the effects of training alone. Furthermore, sports training appears to have a beneficial impact by fostering intrinsic and extrinsic motivation while concurrently reducing levels of amotivation among student-athletes. Given the scope and sample characteristics of the present study, it is recommended that future research be conducted with larger and more diverse populations, including athletes of varying competitive levels and disciplines, to further elucidate the relationship between sports participation, training intensity, and motivational outcomes.

### **Conflict of Interest Statement**

The author declares no conflicts of interest.

### **About the Author**

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