

# The Moderating Role of Perception of Control in the Relationship between Competence Evaluation and Sports Motivation among Athletes

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**Data Availability Statement:** The datasets generated and analyzed during the current study will be available from the corresponding author on request.

## Declarations

### Ethics approval and informed consent

All procedures followed were under the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2000. We obtained informed consent from all principals and students of the sampled schools.

### Conflict of Interest

We have no known conflicts of interest to disclose.

## Abstract

Understanding the role of perception of control in the relationship between competence evaluation and athletes' sports motivation is sacrosanct for optimal performance and participation. The present study examined the direct effect of competence evaluation by (a) investigating its relationship with athletes' sports motivation, (b) the direct effect of perception of control on athletes' sports motivation, and (c) testing the indirect effect of perception of control on the relationship between competence evaluation and athletes' sports motivation. Student-athletes ( $N = 200$ ,  $M_{\text{age}} = 20.61$  years;  $SD = 3.73$ ) completed self-report measures assessing competence evaluation, sports motivation and perception of control. Regression analysis showed that competence evaluation and perception of control were significantly associated with sports motivation; however, the perception of control moderated the interaction of competence evaluation and athletes' sports motivation. Thus, competence evaluation was significantly associated with sports motivation for athletes with moderate and high perceptions of control. The findings underscore the need for athletes, coaches, sports psychologists, and other sports stakeholders to understand how competence evaluation and perception of control interrelate to boost motivational levels among athletes in sports competitions.

**Keywords:** Athletes, Competence evaluation, Sports motivation, Perception of control

## 1. Introduction

Athletes are constantly engaged in competitions and are tasked with representing themselves, an organization, a nation, or both. Athletes are continually faced with various challenges: social, physical, psychological, and stressors, prompting the imperativeness of motivation and competence evaluation in achieving the desired outcome (Jordan et al., 2018; Martinent and Decret, 2015). Although, athletes need to have a positive (winning) evaluation of their competence and be incredibly motivated and encouraged to achieve optimal performance (Turan et al., 2022). However, motivation is imperative for optimal performance in sports. Motivation in sports refers to the internal and external factors that drive athletes to engage in and persist with their sport, improve their performance, and achieve their goals (Lee et al., 2020). It is a critical psychological component that influences effort, consistency, and overall success in athletic endeavours.

Invariably, athletes' participating in the sporting competition can be for pleasure and inherent satisfaction (intrinsic), which is internally self-regulated; extrinsic for external rewards, which are externally controlled and managed by others (extrinsic), which is nonregulated either by an internal or external locus of control (Abdul Azid et al., 2023; Ryan and Deci, 2000; Shah and Sigh, 2024; Yang and Zang, 2020). Thus, these facets of the motivational approach to participate in sports concomitantly lead to varying performance degrees (Chemolli and Gagne, 2014; Durovic et al., 2021). In line with this, self-determination theory (Deci and Ryan, 1985; Ryan and Deci, 2007) asserted that different kinds of motivation are distinctive with varying performances and outcomes depending on whether it is self-directed, intentional, introjected, external, or nonregulated. Motivation (internal/external) activates athletes' activities and bolsters their cognitive and volitional tendencies and competencies (Abdul Azid et al., 2023; Englert and Bertrams, 2015; Baumeister, 2016).

## 2. Literature Review

### 2.1 Competence Evaluation

The attainment of optimal performance does not rely only on the level of athlete motivation but transcends to athlete ability to competence evaluation – "Do I have what it takes to achieve this feat?". Competence evaluation has been identified as a critical component of motivation that helps in the holistic development of athletes (Briki, 2016; Turan et al., 2022). Competence evaluation is the athletes' belief in their ability to perform and succeed at specific tasks (Gomez et al., 2021; Hutter et al., 2016). Thus, comprehending the role of competence evaluation in sports is sine-qua-non, especially concerning motivation, physical activity, and performance (Wahhab and Mutah, 2021; William and Gill, 1995). This is pertinent because competence evaluation comes in a two-fold task goal orientation (ability to contrive (learning, improvement, and effort), leading to preeminent mastery and self-referenced achievement and ego goal orientation (competence ability hinging on one's performance in comparison to others, implying subjectivity and norm-referencing (Delbury, 2019; Nicholles, 1989). Numerous studies (e.g., Gomes et al., 2021; Eccles et al., 1998; Turan et al., 2022; Weiss and Ebbeck, 1996) have shown that competence evaluation significantly influences greater motivation in individuals and self-control.

### 2.2 Perception of Control

Invariably, motivation outcomes and competence evaluation are influenced implicitly or explicitly by the perception of control (Holden et al., 2019; Toering and Jordet, 2015). This is evident since the perception of control facilitates athletes' goal clarity, achievement, and performance enhancement during vigorous exercise, follow-ups, and competitive periods (Englert, 2017). This is made manifest because of its volitional prowess in deliberation, compos mentis, tenacity, and rationale for gratification (Baumeister et al., 2007; Wang et al., 2021). The perception of control is the tendency to have the ability, resources, or opportunities to obtain favorable outcomes or avoid adverse effects through one's actions (Englert et al., 2021; Thompson, 1981). Perception of control connotes an athlete's ability to overcome and change ascendant response proclivity and accord with the athlete's ability to withstand pressure and temptations, remain focused and thought cogitation during training or competitions (Parker et al., 2023; Tangney et al., 2004). It is influenced by locus of control and self-efficacy (Bandura, 1997; Wrosch et al., 2002).

Although studies demonstrate a positive correlation between competence and Motivation (Fletcher and Maher, 2014) and perception of control and Motivation (Hutter et al., 2017), the underlying mechanism that correlates these constructs remains understudied, especially in sub-Saharan Africa. In addition, there is a paucity of research on the buffering effect of perception of control on such relationships, particularly in a neglected sub-Saharan Africa context like Africa (e.g., Nigeria). Thus, the relationship between competence evaluation and motivation was investigated, moderated by the perception of control among athletes in sub-Saharan Africa. The present study bridges the literature gap by identifying the boundary conditions involved in such interaction: perception of control.

### 2.3 Theoretical Framework and Hypothesis Development

The competence motivation theory (Harter, 1978) provides a robust framework for understanding the relationship between competence evaluation, perception of control, and sports motivation among athletes. This theory posits that individuals are motivated to engage in activities that allow them to demonstrate and develop their competence. According to competence motivation theory, athletes are driven to engage in sports when they feel competent. Positive evaluations of their abilities foster self-confidence and a desire to achieve mastery, which enhances motivation. However, even when their competence evaluation is less favourable, a high perception of control experienced by athletes with a strong belief in their ability to influence outcomes is more likely to maintain or increase their motivation. This reassurance in their ability to influence outcomes helps them interpret setbacks as

challenges to overcome rather than as reflections of their abilities, thereby maintaining their confidence and motivation.

On the other hand, a low perception of control experienced by athletes who feel they lack control, even with a positive competence evaluation, may not translate into high motivation. They may attribute success to external factors (luck, coach's decisions) and feel less invested in improving or competing. This lack of control can significantly diminish their motivation and hinder their performance, highlighting the importance of addressing and managing the perception of control in sports.

Furthermore, positive competence evaluation leads to a high perception of control because athletes feel skilled and believe in their ability to direct their performance. This combination leads to strong intrinsic motivation and resilience in challenging situations.

Therefore, building on the theoretical underpinnings of the competence motivation theory, we propose the following hypotheses:

H1. Competence evaluation is positively associated with athletes' motivation.

H2. Perception of control is positively associated with athletes' motivation.

H3. Perception of control would moderate the relationship between competence evaluation and athletes' motivation, such that competence evaluation would be high rather than low for athletes with a high perception of control.

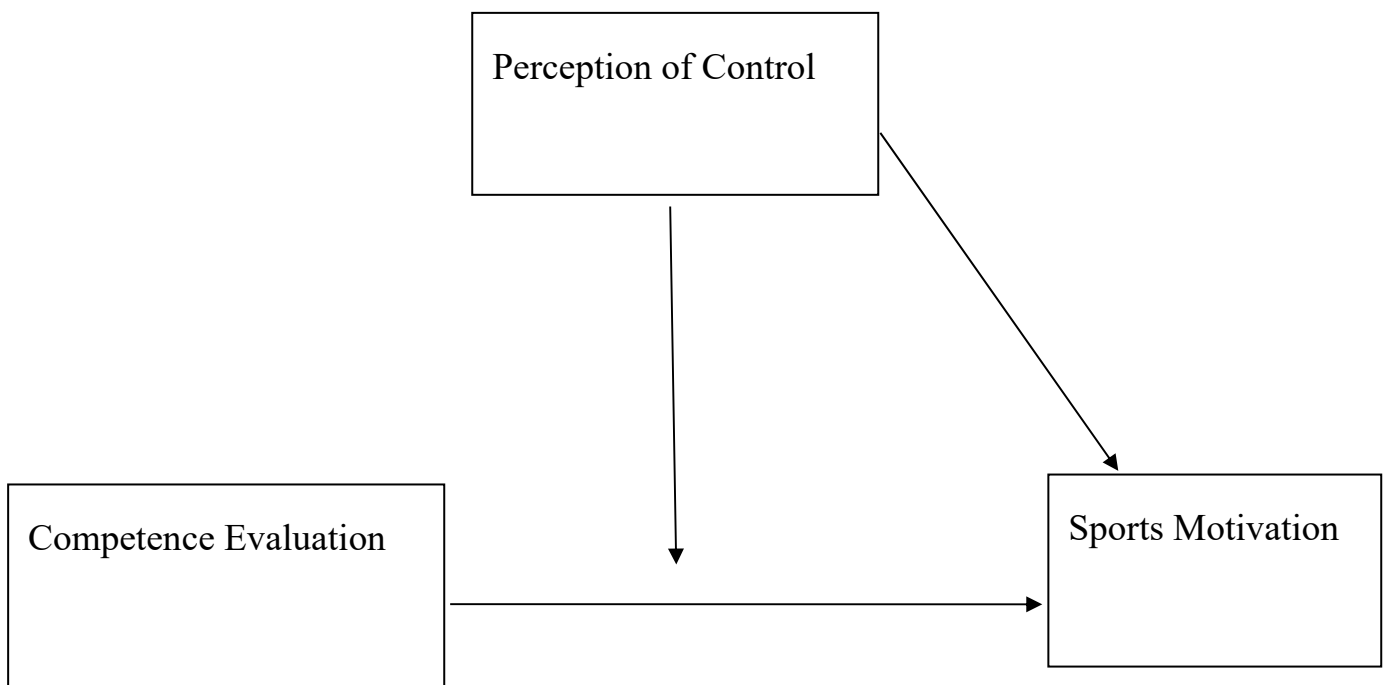


Figure 1. Conceptual model of the study variables.

### 3. Method

#### 3.1 Participants

The participants consist of 104 male (52%) and 96 female (48%) students of the University of Nigeria, Nsukka, who participated in the 2022 Nigerian Universities Games (NUGA). Their ages ranged from 20 to 38 years (Mean age = 20.61; SD = 3.73). The students were in various levels and programs at the university. They represented some diversity concerning religion: Christianity (n = 170), Moslem (n = 10), and others (n = 20). Regarding educational qualification, M.Sc. (n = 20) and undergraduates (n = 180).

#### 3.2 Measures

### 3.2.1 Perceived Control of Internal States Scale (PCOISS, Pallant, 2000)

The PCOISS is an 18-item measure that assesses individuals' perception of the degree to which they feel they have control of their thoughts, emotions, and physical reactions, which, in turn, moderates the impact of events on their wellbeing. Sample items include "I do not have much control over my emotional reactions to stressful situations," "When I am in a bad mood, I find it hard to snap myself out of it," and "My feelings are usually fairly." The PCOISS is scored on a 5-point Likert scale ranging from 1 = strongly agree to 5 = strongly disagree. High scores indicate a high level of perceived control." Pallant (2000) reported a Cronbach's alpha reliability coefficient of  $\alpha = .92$ . The present study showed a Cronbach's alpha reliability coefficient of  $\alpha = .74$ .

### 3.2.2 Self-liking & Self-competence Scale-Revised- (SLCS-R, Tafarodi and Swann, 2001)

The SLSC-R sub-scale for competence was used to measure athletes' competence evaluation. It is a 10-item scale used to assess individuals' degree of agreement reflecting their propensity to excel in sporting activity based on self-efficacy. Sample items include "I am highly effective at the things I do," "I am almost always able to accomplish what I try for," and "I am very comfortable with myself." It is scored on a 5-point Likert format ranging from (1) strongly disagree to (5) strongly agree. A higher score indicates high competence to excel. Tafarodi and Swann (2001) reported a Cronbach's alpha reliability coefficient of  $\alpha = .79$ . The present study showed a Cronbach's alpha reliability coefficient of  $\alpha = .83$ .

### 3.2.3 Sports Motivation Scale (SMS, Pelletier et al., 1995)

The SMS is a 28-item scale to assess individuals' intrinsic and extrinsic motivation levels for their sporting activity. The SMS is responded to on a 7-point Likert format ranging from (1) "Does not correspond at all" to (7) "Corresponds completely." For the present study, the scale was used as a single construct. Pelletier et al. (1995) asserted that it could be used as a composite scale with dimensions or a single construct with its overall score. Pelletier et al. (1995) reported a Cronbach's alpha coefficient of  $\alpha = .89$ . The present study yielded a Cronbach's alpha reliability coefficient of  $\alpha = .92$ , which is satisfactory.

### 3.3 Procedure

The Ethical Committee of the Department of Psychology, University of Nigeria, Nsukka (D.PSY.UNN/REC/2022-1-1RB00013) granted ethical approval for the study. The researchers sought the participants' consent to participate in the study by ticking the consent box on the questionnaire after explaining the purpose of the study and its relevance to the participants and that it is for purely academic purposes. The questionnaires were administered to the participants who volunteered to participate in the study at various camps. They were informed that they could withdraw from the study at any time without any penalty. The participants were also told that the information they would give would be treated with the utmost confidentiality. They were implored to provide honest and accurate responses to the items in the questionnaire. Two hundred and twenty copies of the questionnaire were distributed, out of which two hundred and ten copies of the questionnaires were returned. Out of this number, ten copies were discarded for improper completion, and 200 copies were used for data analysis, showing a response return rate of 90.9%. The participants took 15 to 20 minutes to complete the questionnaires.

### 3.4 Data Analysis

Correlation analysis using SPSS version 25 was used to examine the bivariate relationship between the demographics and the study variables. Model 1 of Hayes' regression-based PROCESS macro for SPSS was applied to test the hypotheses. This was preferred to enable testing of direct relationships and simultaneously check for moderation.

#### 4. Results

Table 1. Means, standard deviations, and inter-correlations between variables

Variables	Mean	SD	1	2	3	4
1 Motivation	91.98	20.94	1			
2 Age	20.62	3.73	.125	1		
3 Gender	1.47	.50	.041	.066	1	
4 Competence Evaluation	25.70	4.05	.412**	.036	-.257**	1
5 Perception of Control	63.21	9.64	.393**	.106	-.202*	.445**

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ ; Gender coded 0=male, 1= female)

As shown in Table 1, gender was negatively correlated with competence evaluation ( $r = -.26$ ,  $p = < .01$ ) and perception of control ( $r = -.20$ ,  $p = < .05$ ). Competence evaluation positively correlated with perception of control ( $r = .45$ ,  $p = < .01$ ). motivation correlated positively with competence evaluation ( $r = .41$ ,  $p < .01$ ) and perception of control ( $r = .39$ ,  $p = < .01$ ).

Table 2. Hayes PROCESS macro results for competence evaluation predicting motivation with the perception of control as a moderator

Variable	Motivation			
	<i>B</i>	<i>T</i>	<i>p</i> -level	95% <i>CI</i>
Competence Evaluation (C.E.)	.54	2.10	.041	[.02, 1.06]
Perception of Control (POC)	1.92	3.95	.000	[.96, .29]
CE X POC	.16	3.04	.003	[.06, .32]

The results in Table 2 revealed that competence evaluation positively predicted sports motivation in athletes ( $B = .54$ ,  $t = 2.10$ ,  $p = .04$ ). This suggests that for every one-unit rise in competence evaluation, athletes' motivation increased by .54 units.

Perception of control was significantly associated with motivation in athletes ( $B = 1.92$ ,  $t = 3.95$ ,  $p = .00$ ), suggesting that for every one-unit rise in perception of control in athletes, motivation increased by 1.92 units.

The interaction of competence evaluation and perception of control was significant ( $B = .16$ , 95% CL [.06, .32],  $p = .003$ ), indicating that perception of control moderated the relationship between competence evaluation and athletes' motivation. This suggested that the perception of control strengthens athletes' competence evaluation and performance, increasing their motivation to participate in sports. All variables in the regression model accounted for 32% of the variance in athletes' motivation for sports. The  $R^2$  for the model was .32, indicating that perception of control and competence evaluation accounted for 32% of the variance in athletes' sports motivation. The F statistics were significant,  $F(3, 136) = 14.28$ ,  $p = .000$

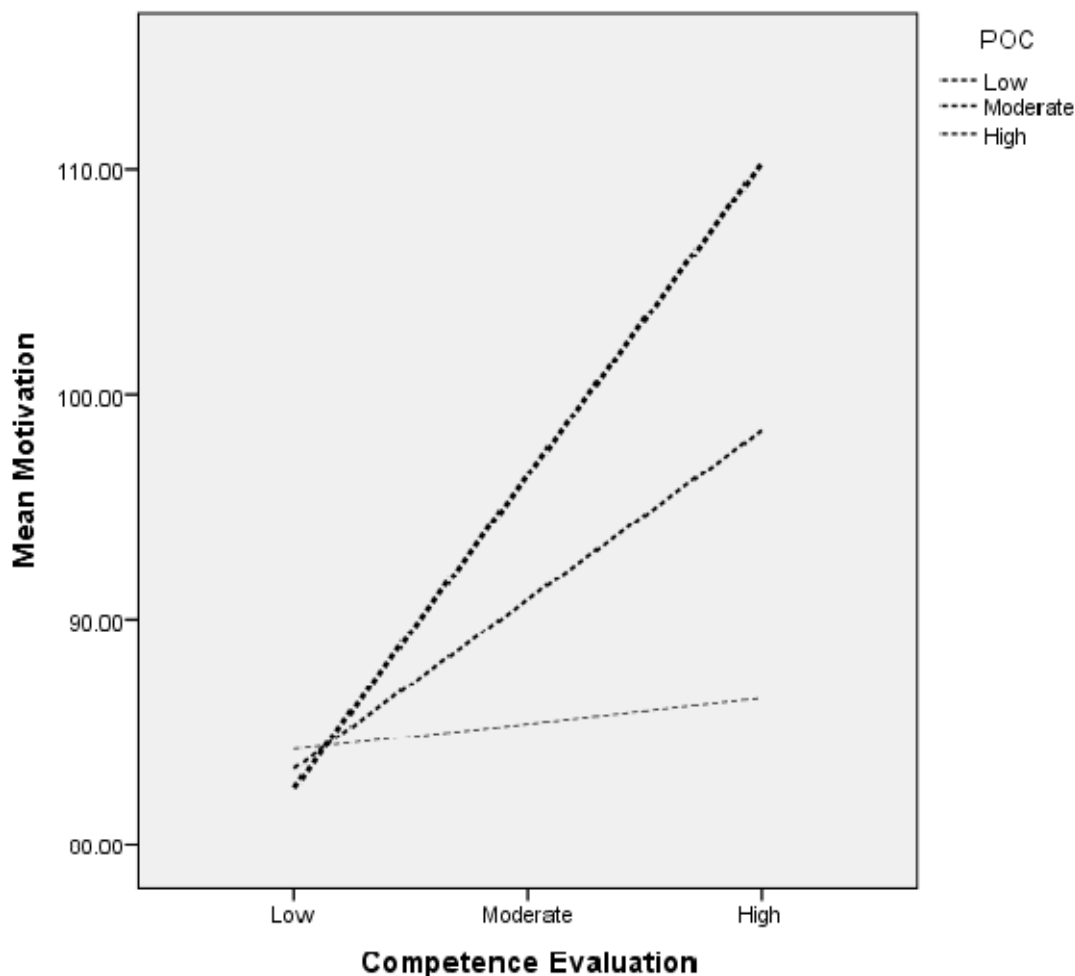


Figure 2. Interaction slope showing the moderating effect of perceived control on competence evaluation and motivation

The slope of the interaction (see Figure 2) indicated that competence evaluation was not significantly associated with motivation among athletes with a low perception of control but for athletes with a moderate and high perception of control.

## 5. Discussion

The aim of the current study was three-fold. First, we examine the direct effect of competence evaluation on athletes' sports motivation; second, we explore the direct effect of perception of control on athletes' sports motivation; and third, we examine the moderating role of perception of control in the relationship between competence evaluation and athletes' sport motivation. The findings showed that competence evaluation was a significant predictor of motivation among athletes. This suggests that the more competent athletes evaluated themselves, the more motivated they became in sporting activity; thus, hypothesis 1 was supported. The result is in line with previous studies (e.g., Gomez et al., 2021; Patterson, 2000; Turan et al., 2022; Vallerand and Reid, 1984), which reported that when coaches evaluated their players as competent and the athletes themselves, they seemed better motivated. Again, the evaluatory feedback on the athletes goes a long way to inform them of how qualified they are for the contest and, as such, could boost their Motivation (Wahhab and Mutah, 2021). It has been shown that competence evaluation, whether by self or others, significantly impacts Motivation (Delbury, 2019; Fletcher and Maher, 2014).

Furthermore, the study revealed that perception of control significantly predicted sports motivation, thus supporting the second hypothesis. This suggests that when athletes perceive themselves to be in control, they seem more motivated and have the self-efficacy and confidence that optimize performance (Parker et al., 2023). This

coincides with extant studies, which revealed that perception of control is vital in preventing negative sports participation development over time (Englert et al., 2021; Ommundsen and Vaglum, 1991) and explicitly increasing levels of motivation in athletes (Jordalen et al., 2018). Athletes are driven by self-determined (intrinsic, integrated, and identified) and controlled (introjected and motivated) regulations in association with perceived self-control offering the strongest positive associations with Motivation (Jordalen et al., 2016; Wang et al., 2021). This is pertinent because the perception of control in individuals may be responsible for influencing a wide range of emotions and not just motivation. Thus, athletes allowed to take charge usually exhibit self-fulfilment and, thus, a high spirit in discharging their activities (Holden et al., 2019).

In addition, the findings showed that perception of control moderated the relationship between competence evaluation and athletes' motivation, thus supporting the third hypothesis. This finding could be explained by Harter's competence motivation theory (1978). The theory explains that individuals' motivation to participate, persist, and work hard in any particular achievement context lies in the degree of feeling of competence and capability. Harter noted that individuals are attracted to participate in activities where they feel competent. In other words, individuals are motivated to engage in mastery attempts to develop or demonstrate competence (Mhajne and AI-Nowaiseh, 2021). For instance, if their skill mastery attempts result in success at an optimally challenging task as well as receive socio-emotional support from significant individuals for such task success, then they will experience perceptions of competence (belief in their abilities in that domain) along with perceptions of performance control (belief in their ability to control their performance). Invariably, high perceptions of competence and control, in turn, result in feelings of pleasure and maintenance of increases in effectance (competence) Motivation (Wang et al., 2021).

## **6. Implications of the Findings**

The present study's findings provide valuable insights into the psychological dynamics influencing athletic performance and motivation. First, the finding showcases competence evaluation as a critical motivational driver. This implies that the perception of one's competence significantly impacts sports motivation. Thus, athletes who evaluate their abilities positively tend to experience higher levels of intrinsic motivation, which is the internal desire to engage in an activity for its own sake, for the inherent satisfaction it provides, rather than for external rewards or pressures.

Secondly, the findings gave insight into whether the perception of control enhances or diminishes motivation, thereby displaying the perception of control as a moderating factor in this relationship. This connotes that athletes with strong control over their performance and outcomes are likelier to maintain or enhance their motivation, even in challenging circumstances. Conversely, a lack of perceived control can weaken the positive effects of competence evaluation on motivation.

Thirdly, Coaches and sports psychologists can leverage these findings to enhance athletes' motivation by fostering environments that promote competence and a sense of control. This understanding provides a solid foundation for developing coaching strategies to boost athletes' motivation and performance. This will help coaches and sports psychologists design intervention strategies and support services for athletes to understand that competence evaluation and perception of control could work hand in hand to boost their motivation levels.

In sum, the complex interactions between competence evaluation, perception of control, and sports motivation highlight the importance of addressing these factors holistically. This holistic approach is crucial in understanding the complexity of the issue and can enlighten practitioners in the field.

## **7. Limitations/Suggestions for Future Studies**

However, our study is not without limitations. First, the small sample size and cross-sectional design do not encourage broad generalization and causal explanations of research findings. Future studies should consider a larger, more inclusive sample size with a mixed-method approach and longitudinal design.

## 8. Conclusion

In conclusion, the perception of control is a crucial psychological construct that moderates the relationship between competence evaluation and sports motivation. By addressing competence and control, stakeholders can create optimal conditions for sustained motivation and performance among athletes. This is pertinent because competence evaluation significantly impacts sports motivation, and the perception of control acts as a moderating factor in this relationship.

### Compliance with Ethical Standards

**Ethical Approval:** All the ethical standards regarding human experimentation (institutional and national) in the Helsinki Declaration of 1975, as revised in 2013, were followed.

**Informed consent:** Informed consent was obtained from all individual participants included in the study.

**Conflict of Interest:** The authors declare no conflicts of interest.

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We acknowledge the student-athletes who participated in the study.

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