

# Impact of Psychological Factors on the Performance of Athletes with Amblyopia: Mediation of Athletes' Satisfaction

Ayhan ÖNAL<sup>1\*</sup>

## Abstract

Amblyopia is a disorder of the eye that may affect a person's vision. It has been noticed that athletes with amblyopia are frequently denied access to higher chances. Hence, individuals experience psychological anguish, which negatively affects their overall performance. Many psychological elements have a significant effect on the performance of athletes. This prompted the current study to examine the link between several psychological aspects (competition and commitment) and athletes' performance, emphasizing the function of players' pleasure as a mediator. 560 Iraqi athletes with amblyopia from various locations were surveyed to acquire data for the present study, which employed a quantitative approach and a survey methodology. The email was used to disseminate the surveys, and data was collected. After data collection, several statistical tools and methods were utilized to conduct statistical analysis. The "Partial Least Square" (PLS) approach was used to evaluate the proposed hypotheses. Several psychological aspects (such as dedication and competitiveness) have a major effect on the performance of athletes, as demonstrated by the current study's findings. Athletes' pleasure strongly moderated the association between psychological characteristics (such as commitment and competitiveness) and athletes' performance.

**Keywords:** Athletes' Satisfaction; Competition; Psychological Factors; Commitment; Athletes' Performance; Amblyopia

## 1. Introduction

In Iraq, several athletes with amblyopia have failed to reach the desired level of performance in recent years. Amblyopia is a condition that affects one eye more than the other and occurs when there is a malfunction between the brain and eyes, preventing the brain from comprehending one eye's sight (Gao, 2022). This is a significant and obvious factor for athletes with amblyopia to display their best performance in Iraq (Habeeb, Warner, & Walsh, 2022). Several of these athletes attempt to demonstrate their abilities despite receiving various external help from management organizations. The athletes cannot perform optimally because they are unaware of the influence of psychological elements on their degree of enjoyment (Jowett et al., 2023). Therefore, the primary objective of this study is to evaluate the effect of psychological variables on the performance of Iraqi athletes with amblyopia, as these psychological elements significantly influence the performance of the athletes.

In addition, the mediation function for athlete happiness is addressed in this study, correlating psychological aspects with the performance or contentment of athletes. In addition to earlier research, this study was extremely supportive of preserving the performance and happiness of athletes (Jahara et al., 2022). This will improve the athletes' ability to optimize their performance, which is crucial.

Long ago, athletes were ignorant of the psychological elements contributing to performance failure (Mosher et al., 2022). Yet, this study has made them aware of these psychological aspects and helped the Iraqi support industry to comprehend them. Multiple studies have been conducted on the performance of athletes; some of these studies have demonstrated the relationship between the performance of athletes and psychological factors; however, the current study is unique in that it examines the relationship between an athlete's performance and psychological factors that have a direct impact on the performance of athletes, such as amblyopia in Iraq.

In addition, earlier research could not study how psychological elements, such as amblyopia, affect athlete performance in Iraq. Still, the current study has shown this physical aspect, which correlates highly with athlete performance in Iraq. In addition, the theoretical perspective of modern research is a crucial aspect of earlier research investigations. Recent research has demonstrated that psychological variables, like amblyopia, play a significant part in the success of athletes' performances and affect their performance and pleasure. According to this latest study, the enhanced value of the amblyopic psychological element improves the performance of athletes. This study aimed to evaluate the psychological effects of amblyopia on athletes and the relationship between psychological impact and athlete satisfaction. In previous research, this sort of investigation was not

<sup>1\*</sup> MD, PhD, Ophthalmologist, Surgeon, Istanbul Yeni Yüzyıl University, Istanbul, Turkey. Email: [drayhanonal@yahoo.com.tr](mailto:drayhanonal@yahoo.com.tr); ORCID ID: <https://orcid.org/0000-0003-3637-0495>,

undertaken in Iraq. In previous research, no one has shown the utility of mixing psychological aspects with athletes' performance. The findings mentioned in this research have yet to be validated in Iraq regarding the association between psychological aspects of amblyopia and athlete satisfaction. Thus, studying this association between psychological characteristics such as amblyopia and atheism among Iraqi populations is beneficial. Athletes in Iraq with this psychological aspect were required to comprehend this connection for optimal performance.

This study's primary objective is to assess the effect of psychological variables on the performance of athletes with amblyopia, as mediated by athlete satisfaction. To accomplish this, the following objectives are proposed:

- To determine the impact of psychological factors (competition and commitment) on athletes' performance with amblyopia.
- To investigate the mediating role of athletes' satisfaction in the relationship between psychological factors (competition and commitment) and athletes' performance with amblyopia.

## 2. Literature Review

### 2.1 Performance Theory

Performance theory might be an efficient method for comprehending psychological elements' effect on athletes' performance. It links the influence of psychological variables and their performance in the context of athletes' understanding of the impact of psychological factors on their performance and their identification of psychological elements. It has been shown that an individual's attitude and behavior significantly affect their performance (Castillo et al., 2021). In this regard, psychological variables play a key role since they influence the individual's psychological health, influencing their behavior. Research (Clayton et al., 2020) has also demonstrated that psychological activity and an individual's performance are associated; thus, the present study will apply performance theory to investigate the relationship between psychological elements and athletes' performance. In this sense, motivation is also a vital aspect that might impact the contentment of sportsmen.

### 2.2 Impact of Psychological Factors on Athletes' Performance

Despite various external support from management bodies, several sportsmen strive to demonstrate their abilities (Mosher et al., 2022). The athletes cannot function at their peak because they are unaware of the influence of

psychological elements on their happiness (Oh, Uhm, & Lee, 2022). The effect on the performance of the sportsmen displays their reliability. On the other hand, previous study reveals that athlete performances demonstrate that the athlete is discovered in their job by completing their limitedly beneficial obligations (Owen et al., 2022). In addition to earlier research, this study supports sustaining performance. This will improve the athletes' ability to optimize their performance, which is crucial. Due to this information or knowledge, athletes have long been aware of the underlying reason for performance failure, including psychological elements (Pettersen, Adolfsen, & Martinussen, 2022). The best performance makes an athlete more professional, increasing their degree of pleasure. The athlete's top performance increases dependability (Pulido et al., 2022). Competition has a tremendous effect on the performance of athletes since it affords them multiple possibilities. It aids in the preservation of their reputation. Athletes would have fewer opportunities if this competition did not exist (Raabe, Tolentino, & Readdy, 2022). In this manner, following an athlete's finest performance, all other athletes will be familiar with him.

In addition, a considerable effect on the performance of athletes allows them to pursue other alternatives. So, athletes have an increasing number of chances. Thus, it is suggested that this is crucial for them. Due to this information or understanding, athletes have long understood the underlying reason for performance failure, including psychological issues. Hence, it is hypothesized:

**H1:** *Competition has a significant impact on the performance of athletes.*

**H2:** *Commitment has a significant impact on the performance of athletes.*

### 2.3 Mediating role of Athletes' Satisfaction

Nonetheless, earlier study reveals that athlete performances demonstrate that they are discovered in their function by doing their limitedly beneficial responsibilities (Rossi et al., 2022). The large influence on the performance of the athletes is therefore beneficial, particularly for their motivation. The link between athletes' dedication and performance is mediated by their pleasure (Mosher et al., 2022). Thus, the large influence of performance boosts the pleasure of sportsmen. In addition to earlier research, this study proved extremely useful for preserving athletic performance and achieving player happiness. Athletes' enjoyment influences the link between competitiveness and performance (Ruiz et al., 2022). According to this study, an athlete is less happy if he does not engage in competition than if he

demonstrates a desire to compete. In this manner, competition has the greatest impact on the players' happiness. According to prior research, commitment is the determination to pursue and accomplish GOALS. This is why "commitment" is used instead of "cause." Nonetheless, only dedication can indeed motivate an athlete to act. Committed athlete contributes to their enjoyment. In this manner, dedication substantially affects the athlete's happiness (Singh, 2022). According to earlier

studies, only contentment enables an athlete to achieve his satisfaction goal. Conversely, an athlete without devotion cannot attain his objectives and misses out on several possibilities. Hence, it is hypothesized:

**H3:** Athletes' satisfaction significantly mediates the relationship between competition and athletes' performance.

**H4:** Athletes' satisfaction significantly mediates the relationship between commitment and athletes' performance.

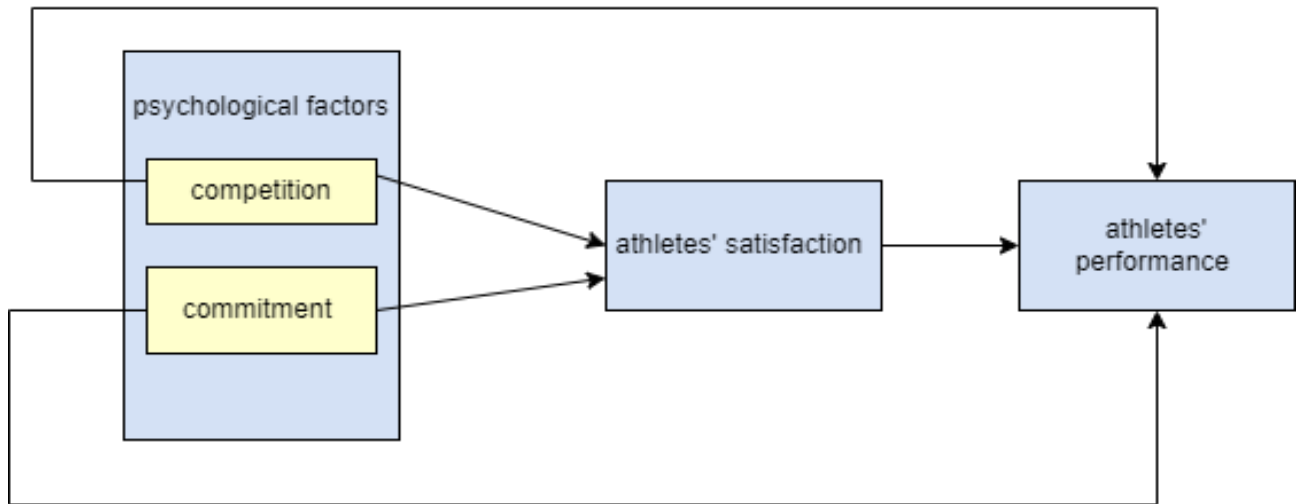


Figure 1. Conceptual framework

### 3. Research Method

The research methodology is significant since it is responsible for data collection and analysis. The study methodology must align with the suggested objectives (Snyder, 2019). In this study, the constructs demonstrate a cause-and-effect connection. So, the most appropriate method for this inquiry is the deductive method, which incorporates the formation of hypotheses. In contrast, the inductive approach emphasizes a thorough comprehension of respondents' experiences. Hence, positivism is the research philosophy of the present study. The current research study is descriptive and cross-sectional.

In educational and corporate research, qualitative, mixed, and quantitative research approaches are evaluated. For the qualitative technique, textual data is gathered; for the quantitative method, statistical data is considered; and for the mixed method, these two approaches are combined (Zhang, 2022). The research approach is chosen depending on the requirements for achieving the objectives. As a result, given the stated objectives of the current study focused on the influence of various psychological elements on the performance of athletes, the quantitative research approach was utilized. This approach was determined to be successful in measuring the investigated variables.

#### 3.1 Population and Sampling

The population is the intended audience for the study (Mishra & Alok, 2022). It is chosen depending on the aims of the research. Therefore the population of this study includes athletes from various areas of Iraq. Due to the impossibility of collecting data from a bigger population, an effective sampling procedure was applied to attain an adequate sample size. There are two sampling methods: probability and non-probability. A random sample of 800 athletes was picked using a non-probability approach called random sampling for the current investigation.

#### 3.2 Data Collection Procedure

The survey is used to collect the necessary data for this research investigation. Towards this end, a questionnaire is designed to include pertinent questions pertaining to the present study's constructs. Validity and dependability were established. Before distributing the questionnaires, the selected respondents' written agreement was obtained, and they were briefed about the purpose and objectives of the current study. Just 710 of 800 surveys that were issued online were returned. These surveys were efficiently examined, and only 580 were utilized for future examination.

### 3.3 Data Analysis

The present quantitative investigation used statistical analysis. In this study, several psychological elements' influence on athletes' performance was examined using various statistical methods. In this regard, AMOS and SPSS were employed as software. Under the context of the present investigation, "Partial Least Square" (PLS) was used to analyze the data.

### 3.4 Measures

For this research study, a "5-point Likert scale" was devised. On this scale, 1 stood for "strongly disagree", and 5 for "strongly agree." The following constructs were obtained from past studies and were modified according to the present study to measure the constructs under research.

- **Competition**

This construct was measured using a 3-item scale adopted by Tseng (2018).

- **Commitment**

This construct was measured using a 3-item scale adopted by Gao (2022).

- **Athletes' performance**

This construct was measured by utilizing a 5-item scale adopted by Gao (2022).

- **Athletes' satisfaction**

This construct was measured using a 3-item scale adopted by Gao (2022).

**Table 1**

*Factor loadings*

	<b>Competition</b>	<b>Commitment</b>	<b>Athletes' Performance</b>	<b>Athletes' Satisfaction</b>
COM1	0.913			
COM2	0.912			
COM3	0.71			
COMM1		0.812		
COMM2		0.882		
COMM3		0.777		
AP1			0.557	
AP2			0.876	
AP3			0.916	
AP4			0.927	
AP5			0.890	
AS1				0.818
AS2				0.887
AS3				0.898

COM= competition; COMM= commitment; AS= athletes' satisfaction; AP= athletes' performance.

### 3.5 Ethical Considerations

Human subject research focuses mostly on ethical issues for effective outcomes. In light of this, the following ethical issues were also taken into account for the present study:

- Respondents' privacy was thoroughly protected, and all their questions about the current study were answered.
  - No prejudice was favored during the research process, and the language of the questionnaire was simple enough for every respondent to grasp it readily.
- Respondents were permitted to quit the research whenever they desired and were allowed to report wrongdoing to the appropriate authorities.
- Respondents were provided with a secure and productive atmosphere. They were also instructed on the goal of the present study, and their written and verbal agreement was solicited.

## 4. Results

The present study's results are presented and determined via different statistical tools and techniques in this section.

### 4.1 Factor Loadings

Loading factors are the correlation coefficients between common factors and observed variables (Kong & Liu, 2018). Several research (Wu & Zhou, 2020) have said that the factor loadings of each scale should be larger than 0.5, while other studies (Baistaman et al., 2020) have suggested that the optimal value should be greater than 0.7. Hence, the variable factor loadings for the current investigation may be viewed in Table 1. According to the findings, the factor loadings of the current study's constructs are similarly more than 0.70.

#### 4.2 Validity and Reliability Analysis

The legitimacy of the data supplied by factor loadings is deemed insufficient. Thus "average variance extracted" (AVE) and "Composite reliability" (CR) were also assessed to guarantee the sufficiency and authenticity of the data for further research. Moreover, Cronbach Alpha ( $\alpha$ ) was calculated for each build (Becker et al., 2020).

Thus, a process is considered reliable if it yields the same outcomes when identical procedures are followed. The variance of the scale is dictated by the scores shown on the scale. The consistent measurements have greater dependability than the inconsistent ones, which have lower reliability. In this instance,  $\alpha$  is a critical device. Its value must be between "0 and 1" (Clifton, 2020). Still, the measurements are acceptable if their  $\alpha$  values are more than 0.70. Hence, Table 2 demonstrates that the value was larger than 0.7 for all variables, namely competition= 0.808, commitment= 0.763, athletes' satisfaction= 0.85, and

athletes' performance= 0.89. This demonstrates that all constructs in the present investigation were independent and more consistent.

In addition, the composite reliability values must exceed 0.70. This is believed to be an effective method for guaranteeing the internal consistency of the scales used in the study. Table 2 displays that the composite reliability scores for each construct were more than 0.7 (competition= 0.888, commitment= 0.863, athletes' performance= 0.923, and athletes' satisfaction= 0.902), indicating that these constructs exhibit internal consistency. To evaluate the consistency of the study's constructs, the value of "average variance extracted" (AVE) must be more than 0.5 in this respect. Table 2 demonstrates that each construct for the present study had a value of more than 0.5 (competition= 0.728, commitment= 0.67, athletes' performance= 0.714, and athletes' satisfaction= 0.755), indicating that these constructs are consistent for further investigation in the present study.

**Table 2**

##### *Validity and Reliability analysis*

	Cronbach's Alpha	rho_A	Composite reliability	AVE
Competition	0.808	0.82	0.888	0.728
Commitment	0.763	0.775	0.863	0.67
Athletes' performance	0.890	0.898	0.923	0.714
Athletes' satisfaction	0.85	0.865	0.902	0.755

#### 4.3 HTMT

The HTMT criteria were used to establish the discriminant validity of the present study's constructs. The distinction between the study's constructs is

indicated by discriminant validity (Rojas & Widiger, 2014). Table 3 demonstrates that the loadings of all constructs are distinguishable from one another, necessitating additional investigation for the current research topic.

**Table 3**

##### *HTMT*

	Commitment	Competition	Athletes' Performance	Athletes' Satisfaction
Competition				
Commitment	0.65			
Athletes' performance	0.678	0.828		
Athletes' satisfaction	0.714	0.592	0.623	

#### 4.4 Hypotheses Testing

In addition, the hypotheses proposed for this research study were evaluated. For this purpose, the direct relationship between competition and athletes' performance and the relationship between commitment and athletes' performance was determined. For indirect effects, the role of athletes' satisfaction as a mediator in the relationship between competition and athletes' performance and the relationship

between commitment and athletes' performance was also examined. The T value must be greater than 1.64 for statistical significance. Table 4 demonstrates that the value of T for each direct and indirect link was more than 1.64. Hence all hypotheses were accepted.

In this sense, p must be less than 0.05 to indicate a statistically significant link. The values of p for all direct and indirect connections were all less than 0.05, indicating the existence of significant correlations.



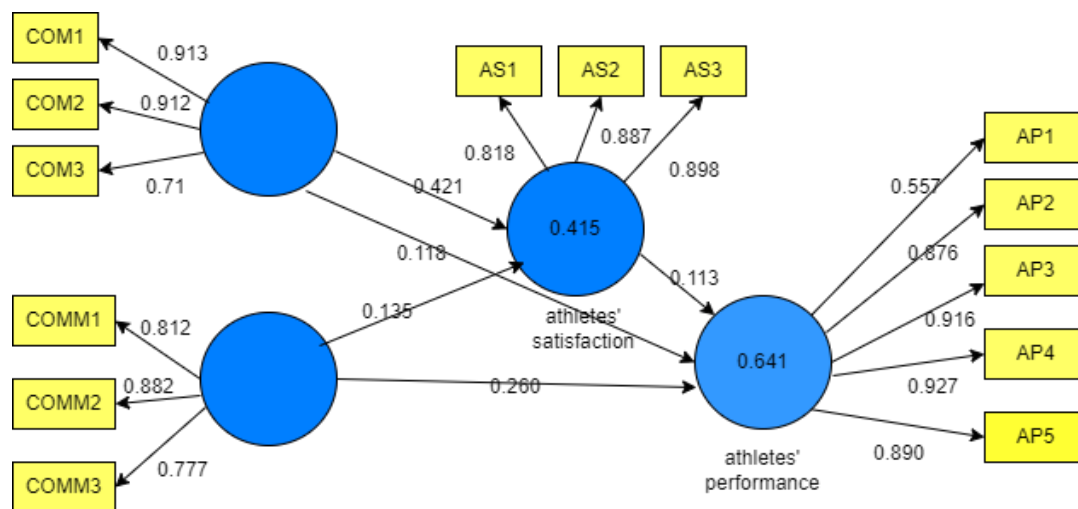
Figure 2 depicts, however, the measuring model for the present investigation. In light of this, the study's final

findings are shown in Table 5, demonstrating that all hypotheses made were confirmed.

**Table 4**

*Hypotheses testing*

	Sample	Mean sample	Standard deviation (Std)	T stats	p-value
<b>Direct effects</b>					
Competition → Athletes' performance	0.262	0.263	0.071	3.611	**
Commitment → Athletes' performance	0.118	0.115	0.065	1.813	0.034
Athletes' satisfaction → Athletes' performance	0.113	0.112	0.05	1.896	0.027
<b>Indirect effects</b>					
Competition → Athletes' satisfaction → Athletes' performance	0.014	0.015	0.006	2.12	0.02
Commitment → Athletes' satisfaction → Athletes' performance	0.047	0.046	0.026	1.734	0.041



**Figure 2.** Measurement model

**Table 5**

*Hypotheses results*

Hypotheses	Results
H1: "Competition has a significant impact on the performance of athletes."	Accepted
H2: "Commitment has a significant impact on the performance of athletes."	Accepted
H3: "Athletes' satisfaction significantly mediates the relationship between competition and athletes' performance."	Accepted
H4: "Athletes' satisfaction significantly mediates the relationship between commitment and athletes' performance."	Accepted

## 5. Discussion

In this study, we explored the effect of psychological variables on the performance of athletes with amblyopia and the role of athlete satisfaction as a mediator. This study aimed to evaluate amblyopia's psychological effects on Iraqi athletes and investigate the association between psychological impact and athlete satisfaction. We did quantitative research to demonstrate the connection between psychological characteristics and athletic performance in Iraq, with athlete satisfaction as a moderator. "Competition has a significant

impact on the performance of athletes" is the first hypothesis of the current study, which is supported by our recent findings. When a piece of labor is completed within a certain time frame due to commitment, it demonstrates the athlete's greatest performance (van Ierssel et al., 2022). As demonstrated by previous research, the link between athletic performance and psychological aspects has been the subject of several studies. Yet, this study is unique because it examines the correlation between athletic performance and psychological issues like amblyopia in Iraq. Athletes will work harder to enhance their performance (Vella et al., 2022).

Moreover, athletes' enjoyment influences the link between competitiveness and performance (Wan Ahmad, Ghazalli, & Mohd Adib, 2021). Thus, the major influence of performance enhances the athletes' contentment. Due to this information or understanding, athletes have long understood the underlying reason for performance failure, including psychological issues. The best performance makes an athlete more professional, which enables the athlete to attain the next degree of fulfillment (Wilkins et al., 2022). Competition has a tremendous effect on the performance of athletes since it affords them multiple possibilities. It aids in the preservation of their reputation. "Commitment has a significant impact on athlete performance" is the second hypothesis of our research study, concluding that commitment is beneficial for performance to obtain the best degree of athlete satisfaction. Our research findings also support this hypothesis. On the other hand, the athletes' performance proves that they are successful in their roles by performing their limitedly valuable responsibilities (Zhang & Shi, 2022).

Nonetheless, according to past research, athletes' performances demonstrate their character by completing only temporarily successful activities (Bou-Sospedra et al., 2022). This study, together with previous research, strongly supports retaining performance. Athletes have long recognized the psychological causes of poor performance. Yet, this research has informed them of these elements so that they can perform at their peak. It also assists Iraqi sports management in understanding the psychological aspect. The final hypothesis of this study, "Athletes' satisfaction mediates the relationship between competition and athletes' performance", is supported by our research findings. In the past, athletes' performance has been the focus of several studies, some of which have demonstrated a correlation between that performance and physiological parameters (Budur & Demir, 2022). This study analyzes the association between this performance and psychological issues, notably amblyopia in Iraq, making it distinct from previous research. Even when they receive aid from management entities in various forms, many athletes fail to exhibit their ability (Castillo, 2022). Athletes cannot deliver their best performance because they are unaware of how psychological factors influence their satisfaction. The fourth hypothesis of this study, "Athletes' satisfaction mediates the relationship between commitment and athletes' performance," is supported by our research findings. The influence on athletes' performances demonstrates their dependability. An athlete who makes a promise is obligated to fulfill it. In this manner, dedication significantly affects the athlete's happiness. An athlete who makes a promise is obligated to fulfill it. In this manner, dedication significantly affects the athlete's happiness.

## 6. Research Implications

The results of our current study are backed by previous research that demonstrates the relationship between psychological aspects and the performance of Iraqi athletes, with athlete satisfaction as a mediator. Our findings indicate that athletes' pleasure mediates the link between competition and athletes' performance. The findings of our current study can successfully inspire future research in this area. Our data indicate that athlete satisfaction mediates the association between athlete commitment and performance. This research will also significantly contribute to the performance theory literature about the relationship between athletes' performance and satisfaction. As a result, this theory's study area will be expanded, which might be a beneficial strategy for future research.

In addition, this study might successfully persuade sporting committees to implement vital policies for athletes with amblyopia. This may be useful for enhancing the training and management of these athletes. This might also create possibilities for minorities in athletics, supporting crucial policies.

## 7. Limitations and Suggestions for Future Research

This study has several limitations that might be resolved in the future. Due to a lack of resources and time, this research was restricted to quantitative analysis. In the future, this might be determined by increasing qualitative investigations in this setting. Because of a lack of resources, the present was cross-sectional. In the future, additional longitudinal investigations should be undertaken. Due to researcher bias, the present study had a restricted number of observable factors. Thus, future research might concentrate on moderating and mediating characteristics such as self-efficacy, motivation, and others. This study also has a small sample size, which can be addressed in future research. This might be an excellent strategy for achieving successful results.

## 8. Conclusion

Competition substantially influences athletes' performance since it provides them with several options (Chun, Creese, & Massof, 2021). That helps to preserve their reputation. In this manner, following an athlete's finest performance, all other athletes will be familiar with him. But, by performing only advantageous duties for a

short time, athletes demonstrate that they are comfortable in their jobs. The fact that this positively affects the athletes' performance, especially in terms of their endurance, is favorable (Crozier et al., 2022). The enjoyment of athletes mediates the connection between commitment and performance. Due to the significant influence of performance, athletes are more content (Crozier et al., 2022). In addition to past studies, this study proved extremely effective in sustaining performance and achieving satisfaction among athletes.

Athletes' pleasure mediates the relationship between competition and performance. Commitment is the determination to pursue and accomplish objectives. Thus, we prefer the term "commitment" over "cause." But, only

dedication truly drives an athlete to perform. The committed athlete is devoted to their fulfillment. Hence, dedication has a huge effect on the enjoyment of the athlete. That is the sole gratification that allows an athlete to achieve their fulfillment goal.

Conversely, an athlete who lacks devotion cannot achieve his objectives and misses out on several possibilities. Due to this information or knowledge, athletes have long been aware of the actual causes of performance failure, which include physiological factors. The best performance enhances an athlete's professionalism, allowing them to proceed naturally to the next level of accomplishment. Unhappy are athletes who have negative performance consequences. Also, the athlete's best effort boosts his reliability.

## References

- Baistaman, J., Awang, Z., Afthanorhan, A., & Rahim, M. Z. A. (2020). Developing and validating the measurement model for financial literacy construct using confirmatory factor analysis. *Humanities and Social Science Review*, 8(2), 413-422. <https://doi.org/10.18510/hssr.2020.8247>
- Becker, P. J., Bellini, S. G., Vega, M. W., Corkins, M. R., Spear, B. A., Spoede, E., Hoy, M. K., Piemonte, T. A., & Rozga, M. (2020). Validity and reliability of pediatric nutrition screening tools for hospital, outpatient, and community settings: A 2018 evidence analysis center systematic review. *Journal of the Academy of Nutrition and Dietetics*, 120(2), 288-318. e282. <https://doi.org/10.1016/j.jand.2019.06.257>
- Bou-Sospedra, C., Adelantado-Renau, M., Beltran-Valls, M. R., & Moliner-Urdiales, D. (2022). The mediating role of self-esteem in the association between physical fitness and risk of depression in adolescents: DADOS Study. *International Journal of Sport and Exercise Psychology*, 1-14. <https://doi.org/10.1080/1612197X.2022.2089198>
- Budur, T., & Demir, A. (2022). The relationship between transformational leadership and employee performance: Mediating effects of organizational citizenship behaviors. *Iranian Journal of Management Studies*, 15(4), 899-921. <https://doi.org/10.22059/ijms.2022.325482.674598>
- Castillo, A., Benitez, J., Llorens, J., & Luo, X. R. (2021). Social media-driven customer engagement and movie performance: Theory and empirical evidence. *Decision Support Systems*, 145, 113516. <https://doi.org/10.1016/j.dss.2021.113516>
- Castillo, E. A. (2022). A Comprehensive and Updated Review of the Performance Profile Technique. *The Sport Psychologist*, 36(3), 206-218. <https://doi.org/10.1123/tsp.2022-0003>
- Chun, R., Creese, M., & Massof, R. W. (2021). Topical review: understanding vision impairment and sports performance through a look at Paralympic classification. *Optometry and Vision Science*, 98(7), 759-763. <https://doi.org/10.1097/OPX.0000000000001723>
- Clayton, M., Jakubowski, K., Eerola, T., Keller, P. E., Camurri, A., Volpe, G., & Alborno, P. (2020). Interpersonal entrainment in music performance: theory, method, and model. *Music Perception: An Interdisciplinary Journal*, 38(2), 136-194. <https://doi.org/10.1525/mp.2020.38.2.136>
- Clifton, J. D. (2020). Managing validity versus reliability trade-offs in scale-building decisions. *Psychological Methods*, 25(3), 259-270. <https://doi.org/10.1037/met0000236>
- Crozier, A. J., Carmichael, M. A., Townsend, J. R., Bingham, J. M., & Stenner, B. J. (2022). Norms in sport: a scoping review. *International Review of Sport and Exercise Psychology*, 1-23. <https://doi.org/10.1080/1750984X.2022.2051151>
- Gao, W. (2022). Effects of psychological factors on players' performance with the mediation role of player's satisfaction. *Revista de Psicología del Deporte (Journal of Sport Psychology)*, 31(3), 77-86. <https://www.rpd-online.com/index.php/rpd/article/view/412>
- Habeeb, C., Warner, S., & Walsh, D. (2022). Managing mental health: Athlete help-seeking. *Sport Management Review*, 25(5), 871-891. <https://doi.org/10.1080/14413523.2021.2018836>
- Jahara, S. F., Hussain, M., Kumar, T., Goodarzi, A., & Assefa, Y. (2022). The core of self-assessment and academic stress among EFL learners: The mediating role of coping styles. *Language Testing in Asia*, 12(1), 1-18. <https://doi.org/10.1186/s40468-022-00170-9>



- Jowett, S., Do Nascimento-Júnior, J. R. A., Zhao, C., & Gosai, J. (2023). Creating the conditions for psychological safety and its impact on quality coach-athlete relationships. *Psychology of Sport and Exercise*, 65, 102363. <https://doi.org/10.1016/j.psychsport.2022.102363>
- Kong, X.-B., & Liu, C. (2018). Testing against constant factor loading matrix with large panel high-frequency data. *Journal of Econometrics*, 204(2), 301-319. <https://doi.org/10.1016/j.jeconom.2018.03.001>
- Mishra, S. B., & Alok, S. (2022). *Handbook of research methodology*. Education publishing.
- Mosher, A., Till, K., Fraser-Thomas, J., & Baker, J. (2022). Revisiting early sport specialization: what's the problem? *Sports Health*, 14(1), 13-19. <https://doi.org/10.1177/19417381211049773>
- Oh, Y.-T., Uhm, J.-P., & Lee, H.-W. (2022). The Effect of Coaching Types on Moral Disengagement in Taekwondo Athletes: The Mediating Role of Pride. *International Journal of Environmental Research and Public Health*, 19(19), 12306. <https://doi.org/10.3390/ijerph191912306>
- Owen, J., Owen, R., Hughes, J., Leach, J., Anderson, D., & Jones, E. (2022). Psychosocial and physiological factors affecting selection to regional age-grade rugby union squads: A machine learning approach. *Sports*, 10(3), 35. <https://doi.org/10.3390/sports10030035>
- Pettersen, S. D., Adolfsen, F., & Martinussen, M. (2022). Psychological factors and performance in women's football: A systematic review. *Scandinavian Journal of Medicine & Science in Sports*, 32, 161-175. <https://doi.org/10.1111/sms.14043>
- Pulido, J. J., López-Gajardo, M. A., Ponce-Bordón, J. C., Vaquero-Solís, M., & Leo, F. M. (2022). Does coaches' satisfaction with the team determine their interpersonal style? The mediating role of basic psychological needs. *European Journal of Sport Science*, 22(2), 248-256. <https://doi.org/10.1080/17461391.2021.1877358>
- Raabe, J., Tolentino, K., & Readdy, T. (2022). An Exploration of National Collegiate Athletic Association Division I Assistant Coaches' Basic Psychological Need Satisfaction and Frustration. *International Sport Coaching Journal*, 1(aop), 1-11. <https://doi.org/10.1123/iscj.2021-0072>
- Rojas, S. L., & Widiger, T. A. (2014). Convergent and discriminant validity of the Five Factor Form. *Assessment*, 21(2), 143-157. <https://doi.org/10.1177/1073191113517260>
- Rossi, C., Roklicer, R., Tubic, T., Bianco, A., Gentile, A., Manojlovic, M., Maksimovic, N., Trivic, T., & Drid, P. (2022). The role of psychological factors in judo: a systematic review. *International Journal of Environmental Research and Public Health*, 19(4), 2093. <https://doi.org/10.3390/ijerph19042093>
- Ruiz, M. C., Appleton, P. R., Duda, J. L., Bortoli, L., & Robazza, C. (2022). Perfectionism and performance-related psychobiosocial states: The mediating role of competition appraisals. *European Journal of Sport Science*, 1-12. <https://doi.org/10.1080/17461391.2022.2049374>
- Singh, R. (2022). *Sports psychology*. KK Publications.
- Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of business research*, 104, 333-339. <https://doi.org/10.1016/j.jbusres.2019.07.039>
- Tseng, L.-M. (2018). How customer orientation leads to customer satisfaction: Mediating mechanisms of service workers' etiquette and creativity. *International Journal of Bank Marketing*, 37(1), 210-225. <https://doi.org/10.1108/IJBM-10-2017-0222>
- van Ierssel, J., Pennock, K. F., Sampson, M., Zemek, R., & Caron, J. G. (2022). Which psychosocial factors are associated with return to sport following concussion? A systematic review. *Journal of sport and health science*, 11(4), 438-449. <https://doi.org/10.1016/j.jshs.2022.01.001>
- Vella, S. A., Mayland, E., Schweickle, M. J., Sutcliffe, J. T., McEwan, D., & Swann, C. (2022). Psychological safety in sport: a systematic review and concept analysis. *International Review of Sport and Exercise Psychology*, 1-24. <https://doi.org/10.1080/1750984X.2022.2028306>
- Wan Ahmad, W. N., Ghazalli, Z., & Mohd Adib, M. A. H. (2021). Anxiety Performance Among Athlete in Response to Theories and Standard Instruments: A Systematic Review. In *Human-Centered Technology for a Better Tomorrow: Proceedings of HUMENS 2021* (pp. 379-394). [https://doi.org/10.1007/978-981-16-4115-2\\_30](https://doi.org/10.1007/978-981-16-4115-2_30)
- Wilkins, L., Dunn, A., Carter, B. N. Z., & Boardley, I. D. (2022). Exploring the relationship between mindset and psychological factors linked to doping. *Performance Enhancement & Health*, 10(4), 100238. <https://doi.org/10.1016/j.peh.2022.100238>
- Wu, W., & Zhou, Z. (2020). Adaptive Estimation for Non-stationary Factor Models And A Test for Static Factor Loadings. *arXiv*, 14708. <https://doi.org/10.48550/arXiv.2012.14708>

- Zhang, T., & Shi, Z. (2022). Research on the Evaluation Model of Athletes Youth Mental Health Education in the context of Positive Psychology. *Revista de Psicología del Deporte (Journal of Sport Psychology)*, 31(2), 132-141. <https://www.rpd-online.com/index.php/rpd/article/view/723>
- Zhang, Y. (2022). Research Methodology. In Y. Zhang (Ed.), *Assessing Literacy in a Digital World: Validating a Scenario-Based Reading-to-Write Assessment* (pp. 51-71). Singapore: Springer Nature Singapore. [https://doi.org/10.1007/978-981-19-5715-4\\_3](https://doi.org/10.1007/978-981-19-5715-4_3)