

Extrinsic And Intrinsic Motivation Among Elite And Non-Elite Women Cricketers Of Pakistan

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Abstract

The current study aimed to investigate the correlation of extrinsic and intrinsic motivation among elite and non-elite women cricketers of Pakistan. Further, the impact of motivation on sports performance was also analyzed. A purposive sampling technique was employed and the study group comprised 200 (elite = 100, non-elite = 100) women cricketers from different regions of Pakistan. The Sports Motivation Scale (Palletier et al., 1995) and Athlete Subjective Performance Scale (Nahum et al., 2016) were used in the study. The collected data was analysed on SPSS version 23.0 using descriptive statistics, Spearman's correlation, and linear regression. As a result, a high level of positive correlation between extrinsic and intrinsic motivation among elite ($r = 0.981^{**}$, $p < 0.001$) and non-elite ($r = 0.991^{**}$, $p < 0.001$) was determined. In addition, it was reported that intrinsic motivation-to know and external regulation had the highest correlation with each other among elite ($r = 0.987^{**}$, $p < 0.001$) and non-elite ($r = 1.000^{**}$, $p < 0.001$) women cricketers. Further, the impact of motivation on sports performance was also found significant in elite ($R^2 = 0.117$, $p < 0.001$) and non-elite ($R^2 = 0.118$, $p < 0.001$) respondents. Motivation is a key factor in sports participation and the development of an athlete's peak performance. The results obtained from this study will be very effective for organizers as well as women cricketers as it can offer them an inside view and enriched knowledge on how motivation works when participating in sports, which in turn can influence their approach to training in particular ways that can keep them motivated.

Keywords Intrinsic motivation, extrinsic motivation, elite, non-elite, Sports performance.

Introduction

Athletes face numerous challenges to pursue excellence in sports. Along the path towards peak performance, they face unlimited hours of intensive training, coping with injuries, fear of failure, as well as the stress of competition. To meet the challenges, athletes need physical and psychological endurance/strength as well (Yalçın et al., 2017). Motivation to take part in sports is one of the topics of interest of researchers in the field of sports psychology (Standage, Curran, & Rouse, 2019). Motivation is essential to all human behavior as it is a force that determines its form, direction, intensity, and duration (Roberts, 2012; Goyal, 2015; Costa, et al., 2017; Ryan & Deci, 2017; Kazén &

Quirin, 2018; Qurban et al., 2019; Murat Aygun et al., 2020). There are three types of motivation; intrinsic, extrinsic, and amotivation (Halbrook et al., 2012). Intrinsic motivation is the ultimate kind of self-determination which means doing something just for pleasure and happiness (Halbrook et al, 2012; Deci, 1975). Extrinsic motivation is described as a concept that an individual's actions are influenced by external factors and rewards (Ryan & Deci, 2000; Özgün et al., 2017; Wendling et al, 2018). Extrinsically motivated athletes are committed to complete a task to gain praise from their peers and spectators, as well as the trophy or medal they will receive if they win. Amotivation has been connected to the lack of interest and concentration in a certain task. Amotivated people do not see the association between their actions and their outcomes (Deci & Ryan, 2000). When athletes are in this scenario, they are unable to discover any positive reasons to participate in any activity which causes them to stop participating in sports.

Many studies supported the correlation between intrinsic and extrinsic motivation and it was reported that extrinsic motivation may increase intrinsic motivation to participate in sports (Van Heerdan CH. 2014; S. Vicente Vieira, 2020). The studies of sports motivation on junior and senior athletes were also conducted and senior athletes were found highly intrinsically motivated as compared to junior athletes having low expectations from external factors (Jenna Memmenga, 2018; D Bratko, 2020) while few researchers found elite athletes to be highly extrinsically motivated to perform certain tasks and skills (Wendling et al., 2018).

Sports performance depends on the complex interaction of physical, psychological, technical, and tactical variables. It is widely recognized that motivation is an important factor for a successful sports performance. Motivation is the most important factor that influences the performance of athletes, a variety of factors, both good and negative, can help athletes to stay motivated and improve their performance. Individuals' assumptions about their abilities to complete activities and achieve desired goals determine their motivation (Yavus,2004). Motivation has been identified as a key psychological aspect in athletes' sports performance in several studies (Claver, F. et al., 2015; Gill & Vallerand, 2016; Olmedilla A. 2019; Ramírez-Granizo et al., 2020; Conde-Pipó et al., 2021). The relationship between intrinsic and extrinsic motivation and sports performance has been studied extensively. Many investigations report that motivation leads to a high level of sports performance (Gillet et al., 2010; D. Singh, 2017; BJ Almagro, 2020; Allyson McCorison, 2020).

Pakistan is always considered the greatest cricket-playing nation in the world as the game is played extensively in the country. Women's cricket has also expanded and grown to reach a variety of nations all over the world during the past two decades. It is widely accepted that there are more opportunities for women in sports as compared to the recent past. Many commentators on Pakistan women's cricket argue that Pakistan's victory in the Asian Games, 2010 & 2014 had a great influence on the popularity of the game among females. As far as the research is concerned, a vast amount of information is available on women's sports but very little on women's cricket and has focused predominantly on fast bowlers in Australia and England.

The current study looked into the two different playing classes of respondents (elite & non-elite) and their motivation in terms of sports participation and performance. The correlation between extrinsic and intrinsic motivation among Pakistani women cricketers has been explored in the study. Further, the impact of motivation on sports performance was also determined. The results of the present

research would be beneficial as a contribution to the knowledge and literature available on this topic. Cricket stakeholders in Pakistan will also be able to utilize the outcomes of the study to enhance their knowledge and product offering to current and potential players. Consequently, the information gathered will help the coaches, athletic administrators, and cricket committees to implement the strategies that will ensure successful performance.

Methods and Materials

The study was carried out using the quantitative method.

Participants

The research participants included elite ($n = 100$) and non-elite ($n = 100$) women cricketers aged between 16-35 years having a minimum of one year of playing experience belong to different regions of Pakistan. The respondents were selected using purposeful sampling and further divided into two categories; elite which is comprised of the players participating in national level competitions, and non-elite cricketers playing at college, school, or club level events. They have different playing roles; batter, bowler, all-rounder, and wicket keeper in their respective teams.

Measures

The Sports Motivation Scale (Pelletier et al., 1995)

The scale was administered to measure intrinsic and extrinsic motivation. The 28-item scale is made up of three subscales assessing extrinsic motivation, intrinsic motivation, and amotivation (The four items indicating amotivation were not tested because the participants were involved in structured team sports having the motivation to play). Extrinsic Motivation and intrinsic motivation have further six subscales including external, introjected, and identified regulation; intrinsic motivation to know, to experience stimulation, and to accomplish. Each item was rated on a 7-point Likert-Scale ranging from 1 (does not correspond at all) to 7 (corresponds exactly). Cronbach alpha coefficient for the scale is 0.973 for elite and 0.976 for non-elite respondents.

Athlete Subjective Performance Scale (Nahum et al., 2016)

The scale is comprised of 6 items that encourage the subjective assessment of women cricketers about their performance. The scale identified three major aspects of sports performance; general performance, team contribution, and personal ability. The score was rated on 10-point Likert-scale ranging from 1=not at all satisfied to 10=fully satisfied which were summed up to identify the overall performance level. Cronbach alpha coefficient for the scale is 0.986 for elite and 0.966 for non-elite respondents.

Procedure

To collect data, all the participants were informed about the research procedure, purpose of investigation, and given their written consent before participation. The researcher used face to face technique to collect data and the data was collected before the competition. All the participants' data was registered and stored anonymously.

Data Analysis

The statistical analysis of the data was done using SPSS 23.0 (IBM®). For statistical analysis, Cronbach's alpha reliability of instruments was tested. Normality was also tested by performing the Shapiro-Wilk test. Descriptive statistics were also calculated. To check the correlation between variables, spearman's correlation test was used and linear regression was used to check the impact of one variable on the other. Significance was accepted at $p < 0.05$ in the analysis.

Results

The results from descriptive statistical tests to check the correlation and impact are presented.

Table 1: Frequencies and percentage of study respondents

Variables	Groups	Elite	Non-elite (n =
		(n = 100)	100)
		f, %	f, %
Age	16-20 Years	9	54
	21-25 Years	51	36
	26-30 Years	31	10
	31-35 Years	9	--
	Total	100	100
Playing Role	Batter	18	58
	Bowler	4	24
	All Rounder	71	8
	Wicket Keeper	7	10
	Total	100	100
Playing Experience	Less than 5 Years	41	87
	More than 5 years	69	13
	Total	100	100

Table 1 shows that most of the elite respondents (51%) were between ages of 21-25 years while most of non-elite respondents were 16-20 years of age. All rounder elite respondents were high in number (71%) and most of non-elite respondents were batters (58%). Elite respondents having more than five years of experience were high in number (69%) as compared to non-elite as most of non-elite respondents had less than five years of experience (87). The frequencies and percentages of respondents were same because study sample size was 100 for elite and non-elite respectively.

Table 2: Cronbach's Alpha Reliability of Instruments

Scales	No. of items	Elite	Non-elite
		p – value	p – value
Sports Motivation Scale	28	0.973	0.976
• Intrinsic Motivation	12	0.927	0.932
• Extrinsic Motivation	12	0.956	0.956

• Amotivation	04	0.755	0.839
Athlete Subjective Performance Scale	06	0.986	0.966

The Sports Motivation scale is comprised of three subscales, (i) Intrinsic motivation, (ii) Extrinsic motivation, and (iii) Amotivation and the scale reliability for elite is 0.973 and 0.976 for non-elite women cricketers of Pakistan which is excellent. Athlete Subjective Performance Scale (ASPS) had a reliability of 0.986 for elite and 0.966 for non-elite respondents which is considered highly acceptable.

Table 3: Shapiro-Wilk Test of Normality of Data

Variables	Elite			Non-elite		
	Statistics	df	p – value	Statistics	df	p – value
Sports Motivation Scale	0.988	100	0.487	0.977	100	0.084
• Intrinsic Motivation	0.987	100	0.443	0.977	100	0.078
• Extrinsic Motivation	0.984	100	0.277	0.977	100	0.073
• Amotivation	0.978	100	0.095	0.971	100	0.027
Athlete Subjective performance Scale	0.981	100	0.158	0.979	100	0.114

df= Degree of Freedom

The findings of data normality indicates that the data is normally distributed as $p > 0.05$ of all scales except amotivation which has not been analyzed in the research because all participants were actively taking part in sports having some motivation to play.

Table 4: Descriptive Statistics of Study Variables

Variables	No. of items	Elite		Non-elite	
		M	SD	M	SD
Overall Sports Motivation Scale	28	3.94	1.118	4.22	1.077
Intrinsic Motivation	12	3.93	1.067	4.23	1.082
• To know	4	3.91	1.489	4.15	1.316
• To accomplish	4	4.11	0.752	4.18	0.846
• To experience stimulation	4	3.77	1.193	4.36	1.094
Extrinsic Motivation	12	3.96	1.208	4.18	1.103
• Identified Regulation	4	3.99	0.838	4.19	0.762
• Introjected Regulation	4	3.95	1.445	4.18	1.379
• External Regulation	4	3.95	1.454	4.17	1.283
Amotivation	4	3.87	1.072	4.36	1.094
Athlete Subjective Performance Scale	6	5.24	1.800	5.18	1.685

** Correlation is significant at the 0.01 level (2-tailed). M= Mean, SD= Standard deviation

Overall descriptive of sports motivation scale showed that non-elite had highest mean value as compared to elite women cricketers (Elite; 3.94 ± 1.118 , non-elite; 4.22 ± 1.077). Athlete Subjective

Performance Scale consists of 6 items which had a high mean value among elite (elite; 5.24 ± 1.800) as compared to non-elite (5.18 ± 1.685) respondents.

Table 5: Correlation of Extrinsic and Intrinsic Motivation among Elite & Non-elite respondents

Variables	Elite		Non-elite	
	r	p – value	r	p – value
Extrinsic Motivation × Intrinsic Motivation	0.981**	<0.001	0.991**	<0.001

** Correlation is significant at the 0.01 level (2-tailed).

The result shows that extrinsic motivation has significantly positive correlation with the intrinsic motivation among both elite ($r = 0.981$ **, $p = < 0.001$) and non-elite ($r = 0.991$ **, $p = < 0.001$) respondents.

Table 6: Correlation of Intrinsic motivation and Extrinsic Motivation Sub-scales among Elite and Non-elite Respondents

Variables	Elite		Non-elite	
	r	p – value	r	p – value
IM-to know × EM-Identified regulation	0.845**	<0.001	0.806**	<0.001
IM-to know × EM-Introjected regulation	0.985**	<0.001	0.998**	<0.001
IM-to know × EM-External regulation	0.987**	<0.001	1.000**	<0.001
IM-to accomplish × EM-Identified regulation	0.858**	<0.001	0.962**	<0.001
IM-to accomplish × EM-Introjected regulation	0.560**	<0.001	0.845**	<0.001
IM-to accomplish × EM-External regulation	0.595**	<0.001	0.841**	<0.001
IM-to experience stimulation × EM-Identified regulation	0.917**	<0.001	0.868**	<0.001
IM-to experience stimulation × EM-Introjected regulation	0.945**	<0.001	0.954**	<0.001
IM-to experience stimulation × EM-External regulation	0.948**	<0.001	0.953**	<0.001

** Correlation is significant at the 0.01 level (2-tailed). IM= Intrinsic motivation EM-Extrinsic Motivation

Table 6 represents the correlation of extrinsic motivational factors (identified regulation, introjected regulation, and external regulation) with the intrinsic motivational factors (IM-to know, IM-to accomplish, and IM-to experience stimulation). The results illustrate that all the variables of intrinsic motivation are positively correlated with the extrinsic variables among elite and non-elite respondents. The highest correlation among both elite and non-elite respondents was found between IM-to know and external regulation (elite; $r = 0.987$ **, $P = < 0.001$ and non-elite; $r = 1.000$ **, $p = < 0.001$).

Table 7: Regression Analysis between Motivation and Sports Performance among Elite and Non-elite Respondents

Model	R	R ²	Adjusted R ²	Std. error of the estimate	Durbin-Watson
Elite	0.342 ^b	0.117	0.108	1.700	1.520
Non-elite	0.343 ^b	0.118	0.109	1.591	1.618

a. Predictors: (Constant), Motivation

b. Dependent Variable: Sports Performance

The regression input identifies that 11% of the variation in sports performance is influenced by motivation as R² is 0.117 and 0.118 for elite and non-elite respectively.

Table 8: Analysis of Variance of Elite and Non-elite Respondents

Model		Sum of squares	df	Mean square	F	p – value
Elite	Regression	37.486	1	37.486	12.956	<0.001 ^c
	Residual	283.541	98	2.893		
	Total	321.027	99			
Non-elite	Regression	33.081	1	33.081	13.065	<0.001 ^c
	Residual	248.146	98	2.532		
	Total	281.228	99			

a. Dependent Variable: Sports Performance

b. Predictors: (Constant), Motivation

To examine the significance of the fitted model-1, the analysis of variance (ANOVA) technique is used under the regression analysis. The regression model result is significant because p – value is < 0.001^c among both elite and non-elite respondents.

Table 9: Regression Coefficient of Elite and Non-elite Respondents

Model		Unstandardized Coefficients		Standardized Coefficients	t	P – value
		B	Std. Error	Beta		
Elite	(Constant)	3.079	0.626		4.919	<0.001
	Motivation	0.550	0.153	0.342	3.599	<0.001
Non-elite	(Constant)	2.912	0.648		4.497	<0.001
	Intrinsic motivation	0.537	0.148	0.343	3.615	<0.001

a. Dependent Variable: Sports Performance

The table shows that motivation has a significant impact on sports performance of respondents as p – value (p =< 0.001).

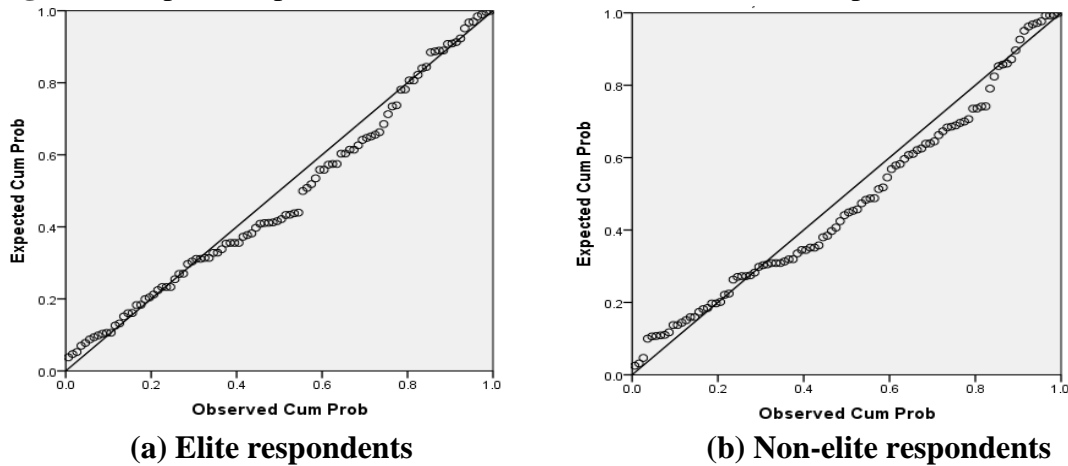
Elite

$$\begin{aligned} \text{Sports performance} &= b_0 + b_1 \text{ motivation} \\ &= 3.079 + (0.550 \times \text{sports motivation}) \end{aligned}$$

Non-elite

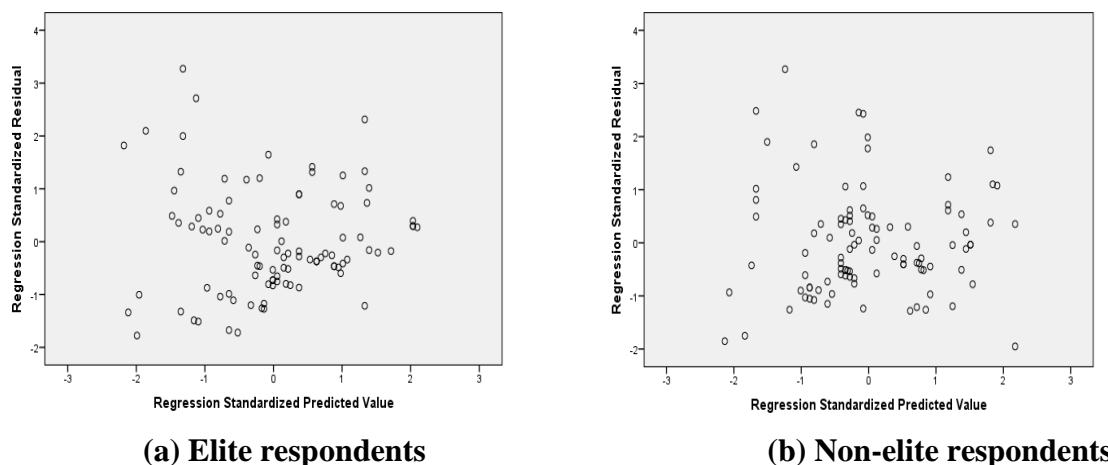
$$\begin{aligned} \text{Sports performance} &= b_0 + b_1 \text{ motivation} \\ &= 2.912 + (0.537 \times \text{sports motivation}) \end{aligned}$$

Figure 1: P-plot of Sports Performance of Elite and Non-elite Respondents



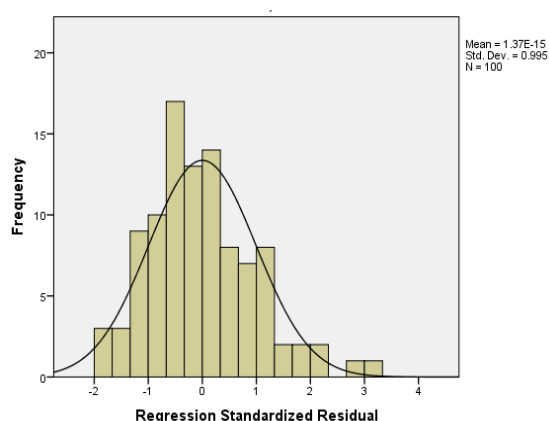
The straight line in the plots indicates a normal distribution of data, and the points in this plot reflect the observed residuals, whereas the straight line depicts a normal distribution. As a result of the skewed distributed data set, all points fall close to the line.

Figure 2: Plots of Standardized residuals against Standardized Predicted Values

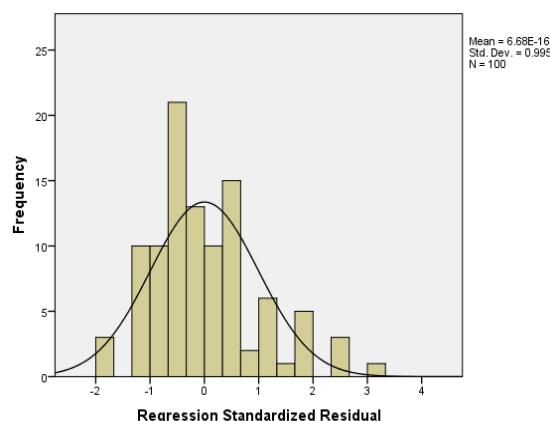


The Figure shows the graph for the data in our mean sports performance. This pattern is indicative of a situation in which the suppositions of linearity and homoscedasticity have been met.

Figure 3: Histogram and Normal probability Plot of Elite and Non-elite Respondents



(a) Elite respondents



(b) Non-elite respondents

The histogram should look like a skewed distribution. SPSS draws a curve on the histogram to show the shape of the distribution. The histogram for motivation of elite respondents indicated that mean of sports performance is $-1.37e^{-15}$, Standard deviation 0.995, and $n = 100$. The histogram for overall motivation of non-elite respondents indicated that mean of sports performance is $6.68e^{-16}$, Standard deviation 0.995, and $n = 100$.

Discussion

The study provided several significant conclusions, including the impact of motivation on sports performance and descriptive results of motivation and performance variables. Before data analysis, the reliability and validity of the research data was tested. A Validity test was done to check whether the instruments are reliable for the study. The validity of Sports Motivation Scale and Athlete Subjective Scale was above 0.90 which is excellent (See table.2). The normality test was required to check whether data is normally distributed or close to normal. The Shapiro-Wilk test was used to check the data normality and the results indicated normal data distribution(See table.3). In the current study, all the participants were currently playing cricket matches and practicing several times weekly at the time of data collection. The study was carried out to determine the correlation between extrinsic and intrinsic motivation and impact of motivation on sports performance of elite and non-elite women cricketers of Pakistan.

It was hypothesized that extrinsic motivation and intrinsic motivation has a significant relationship with each other. To test the hypothesis, the Spearman's correlation was used and the statistical research revealed a significant correlation between the extrinsic and intrinsic motivation of respondents (elite; $r = 0.981^{**}$, non-elite, $r = 0.991^{**}$ $P < 0.001$ which indicates that an increase in extrinsic motivation will enhance intrinsic motivation (Table.5). The results supported the previous studies done in sports setting (Van Heerdan CH. 2014; Wendling et al., 2018; S. Vicente Vieira, 2020). The highest positive correlation was found between intrinsic motivation-to know and external regulation (elite; $r = 0.987^{**}$; non-elite; $r = 1.000^{**}$, $p < 0.001$) among both elite and non-elite respondents (Table.6) The results supported the findings of Van Heerdan CH. (2014) which reported that female athletes in South Africa have high correlation between extrinsic and intrinsic motivation for sports participation.

The present study further explored the impact of motivation on the sports performance of respondents. Motivation plays an immense role in the development of athlete' peak performance and without

motivation, athletes are unable to support the training effort to improve their psychomotor abilities (Cerasoli et al., 2014). Although motivation is the most important factor that influences how athletes perform, a variety of factors, both good and negative, can help athletes stay motivated and improve their performance. In a sample of elite and non-elite women cricketers, a linear regression was used to see the extent of the impact of the motivation on sports performance of women cricketers of Pakistan. The result of statistical analysis showed a significant impact of motivation of elite respondents ($R = 0.117, p = < 0.001$) and non-elite respondents ($R^2 = 0.118, p = < 0.001$) on the sports performance (Table 7 & 8). These results supported the studies conducted earlier which reported that intrinsic and extrinsic types of motivation improve sports performance of athletes (Christian sengfelder, 2019; Almagro, B. J., et al, 2020; Zipprah Rebekah Foster, 2020; B. McCorison, 2020).

Conclusion

The findings provide full support to the study hypothesis which was that extrinsic motivation would predict an increase in intrinsic motivation. The results of current study supported the previous findings and have broadened our understanding of how motivational factors influence sports participation and performance. The study reported a highly significant impact of motivation on sports performance of athletes as motivation is considered as a key factor in sports participation and the development of an athlete's peak performance. Based on the results, it is suggested that studies should be done focusing on the factors which enhance motivation of athletes who take part in sports at junior or senior level. Sports organizations and educational institutions are advised to provide professional psychological support to enhance sports motivation by considering the psychological needs of athletes such as appreciation, incentives, security, and support. Future research should include athletes from other individual and team sports. Furthermore, team managers and program directors must understand when and how to use various forms of incentive to satisfy the psychological demands of the athletes.

Conflict of Interest

The Authors declare that they have no conflict of interest

References

- Almagro BJ, Sáenz-López P, Fierro-Suero S, Conde C (2020). Perceived Performance, Intrinsic Motivation and Adherence in Athletes. *Int J Environ Res Public Health*. 16;17(24):9441. doi: 10.3390/ijerph17249441. PMID: 33339278; PMCID: PMC7767293.
- Aygun Murat, Demir, & Elif Kubra. (2020). Analyzing motivation for sports consumption of students at school of physical education and sports. *Asian Journal of Education and Training*. Vol, 6(2),314-319. DOI: 10.20448/journal.522.2020.62.314.319.
- Bardach, L., Oczlon, S., Pietschning, J., & Luftenegger, M. (2020). Has achievement goal theory been right? A meta-analysis of the relation between goal structures and personal achievement goals. *Journal of Educational Psychology*, 112(6), 1197–1220. <https://psycnet.apa.org/doi/https://doi.org/10.1037/edu0000419>.
- Bratko, D., Trninić, V., & Trninić, M. (2020). Motivational differences between athletes at junior and senior level: An analysis of the football, handball, and water polo players. *Journal of human sport and exercise in press*: <https://doi.org/10.14198/jhse.2022.173.13>

- BY. Ally McCorison (2020). The relationship between locus of control & athletic Performance https://digitalcommons.bryant.edu/cgi/viewcontent.cgi?article=1029&context=honors_management.
- Cerasoli, C.P., Nicklin, J.M. and Ford, M.T., 2014. Intrinsic motivation and extrinsic incentives jointly predict performance: A 40-year meta-analysis. *Psychological bulletin*, 140(4), pp.980-1008.
- Conde-Pipó, J.; Melguizo-Ibáñez, E.; Mariscal-Arcas, M.; Zurita-Ortega, F.; Ubago-Jiménez, J.L.; Ramírez-Granizo, I.; González-Valero, G (2021). Physical Self-Concept Changes in Adults and Older Adults: Influence of Emotional Intelligence, Intrinsic Motivation and Sports Habits. *Int. J. Environ. Res. Public Health*, 18, 1711. <https://doi.org/10.3390/ijerph18041711>.
- Costa, L., Passos, P. C. B., Souza, V.M., & Vieira L. (2017). Physical Education and sports: Motivation for school daily practice. *Movimento* 23, 935-948. Disponible en: <https://www.cabdirectr.org/cabdirect/abstract/20173384689>.
- Deci, E. L. (1975). *Intrinsic motivation*. New York: Plenum
- Deci E.L., Ryan R.M. (2000). The “what” and “why” of goal pursuits: Human needs and the self-Determination of behaviour. *Psychological inquiry* 111, 227-268.
- Dileshwar Singh & Dr. Manoj Kumar Phatak. (2017). Role of motivation and its impact on the performance of a sports person. *International journal of physical education, sports and health*; 4(4): 340-342.
- Formenti, D.; Duca, M.; Trecroci, A.; Ansaldi, L.; Bonfanti, L.; Alberti, G.; Iodice, P (2019). Perceptual vision training in non-sport-specific context: Effect on performance skills and cognition in young females. *Sci. Rep.* 9, 1–13.
- Foster, Zipporah Rebekah, "Play Like You Mean It: Motivational Predictors of Female Student Athletes' Practice and Game Performance" (2018). Online Theses and Dissertations. 568. <https://encompass.eku.edu/etd/568>.
- Gillet, N., Vallerand, R. J., Amoura, S., & Baldes, B. (2016). Influence of coaches' Autonomy support on athletes' motivation and sport performance: A test of the hierarchical model of intrinsic and extrinsic motivation. *Psychology of Sport and Exercise*, 11(2), 155–161. <https://doi.org/10.1016/j.psychsport.2009.10.004>.
- Goyal, P.K. (2015). Motivation: Concept, theories and practical implications. *International Research Journal of Commerce Arts and Science*, 6 (8), 71-78
- Halbrook, M., Blom, L. C., Hurley, K., Bell, R. J., & Holden, J. E. (2012). Relationships among motivation, gender, and cohesion in a sample of collegiate athletes. *Journal of Sport Behaviour*, 35(1), 61–77. (2012-03551- 004).
- Jenna Mammenga (2018). Sports motivation of senior athletes (Honors thesis Education. University of South Dakota. received from UDR RED.
- Kazén, M., and Quirin, M. (2018). “The integration of motivation and volition in personality systems interactions (PSI) theory,” in *Why People Do the Things They Do: Building on Julius Kuhl’s Contributions to the Psychology of Motivation and Volition*, eds N. Baumann, M. Kazein, M. Quirin, and S. L. Koole (Göttingen: Hogrefe),15–30.
- Özgün, A., Yaşartürk, F., Ayhan, B., and Bozkuş, T. (2017). Examination of handball players’ levels of sports-specific achievement motivation and happiness. *International Journal of Cultural and Social Studies*, 3(2), 83-94.

- Qurban, H., Wang, J., Siddique, H., Morris, T., and Qiao, Z. (2019). The mediating role of parental support: The relation between sports participation, self-esteem, and motivation for sports among Chinese students. *Current Psychology*, 38(2), 308-319.
- Ramírez-Granizo, I. A., Sánchez-Zafra, M., Zurita-Ortega, F., Puertas-Molero, P., González Valero, G., & Ubago-Jiménez, J. L. (2020). Multidimensional self-concept depending on levels of resilience and the motivational climate directed towards sport in schoolchildren. *International Journal of Environmental Research and Public Health*, 17(2), 1–12. <https://doi.org/10.3390/ijerph17020534>
- Roberts, G. C. (2012). Motivation in Sport and Exercise from an Achievement Goal Theory Perspective: After 30 Years, Where Are We? In G. Roberts, & D. Treasure (Eds.), *Advances in Motivation in Sport and Exercise* (3rd ed., pp. 5-58). Champaign, IL: Human Kinetics.
- Ryan, R. M., & Deci, E. L. (2017). *Self-determination theory: Basic Psychological needs in motivation development and wellness*. New York, NY: Guilford Publishing\
- S Vincente Vieira et al., (2020). Motivation and basic psychological needs in basketball initiation. *Revista PODIUM*,; 15(1):22-37. ISSN: 1996–2452 RNPS: 2148.
- Sengfelder, Christian (2019). *The Relationship Between Perfectionism and Self-Determined Motivation in Collegiate Division I Athletes*. Boise State University Theses and Dissertations. 1537.10.18122/td/1537/boise state.
- Standage, M Curran, T., & Rouse, P.C. (2019). Self-determination based theories of sports, exercise, and physical activity motivation. In T. S. Horn, & A. L. Smith (Eds), *Advances in sports and exercise psychology* (4th Edition) (pp. 289-311). Human Kinetics.
- Van Heerden CH. (2014). The relationships between motivation type and sport participation among students in a South African context: *Journal of physical education and sport*. 5(6), 66-71.
- Wendling, E., Flaherty, M., Sagas, M., & Kaplanidou, K. (2018). Youth athletes sustained involvement in elite sport: An exploratory examination of elements affecting their athletic participation. *International Journal of Sports Science & Coaching*, 13(5), 658–673. Horn (Ed.), *Advances in sport psychology* (p. 101–170). Human Kinetics.
- Yalçın, İ., Turğut, M., Gacar, A., and Çalık, F. (2017). Investigation of sport participation motivation of female sportsmen who study at school of physical education and sports according to some variables. *International Journal of Cultural and Social Studies (IntJCSS)*, 3(2), 201-210.