

DO PERSONALITY TRAITS AND ACHIEVEMENT MOTIVATION DIMENSIONS INFLUENCE OUR CHOICE OF SPORTS ACTIVITY?

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Abstract

This study aimed to examine whether there are statistically significant differences in personality structure and achievement motivation dimensions between athletes involved in individual and team sports, as well as between recreational and professional athletes. We operationalized personality traits through the Serbian translation of BFI, and the motive for achievement through MOP2002. We conducted cross-sectional research online. The sample consisted of 173 respondents, of which 55.5% were engaged in individual and 29.5% in team sports; 23.1% were professional and 73.4% were recreational athletes. There were 86 men in the sample (49.7%). The mean age of the subjects was 26 ± 7.8 . The results show that athletes engaged in individual and team sports, as well as professional and recreational athletes, don't statistically differ on 5 personality traits ($p > .05$). Athletes playing team sports achieve higher results in orientation towards competition from those playing individual sports ($t(146) = -3.9$; $p < .01$). Athletes playing individual and team sports don't differ in the expression of orientation towards achieving goals, orientation towards planning nor in perseverance in achieving the goal ($p > .05$). Professional athletes have a more pronounced orientation towards competition with others ($t(165) = 3.9$; $p < .01$) and an orientation towards achieving goals ($t(165) = 3.6$; $p < .01$), they are more persistent in achievement of goals ($t(165) = 2.3$; $p < .05$), while the orientation towards planning is equally present in both groups ($t(165) = -.80$; $p > .05$). We can conclude that personality traits are not and the motivation for achievement is in a dependent relationship with the choice of individual or team sport, nor with playing sports professionally or recreationally.

Keywords: individual and team sports, professional athletes, recreational athletes, motive for achievement, personality

Introduction

Personality, complex and unique in each person, as well as motivation as our daily driver, are at the core of all forms of human behavior and action, including sports. Sport refers to various, competitively oriented, motor activities of variable and dynamic character, which enable meeting the need for movement, development of abilities, characteristics and sports knowledge, sports expression and creativity, as well as preserving and improving health and achieving sports results at all levels of competition (Milanović, 2009). However, given the qualitative level, sport can be top, ie professional and "sport for all", ie recreational. Professional sports involve individuals who meet strict health and selection criteria and show a high level of ability and characteristics, while participation in recreational sports requires only interest and the necessary motivation for regular exercise and the absence of health contradictions (Milanović, 2009). In addition, the basic characteristic of recreational sports

is leisure and entertainment, and the basic goal is not to win but to raise and maintain health and fitness. Also, given the organization of the sport itself, the sport can be individual (athletics, swimming, martial arts) and team (football, volleyball, basketball). Each sport offers different advantages. Thus, team sport develops and encourages a sense of community, while individual sport encourages the concentration and perseverance of the individual.

Although defining a personality seems like an easy task, it is complex to make a distinction between personality traits, and some other psychological variables. A sufficiently comprehensive theory of personality should be conceived taking into account the structure, development and dynamics of personality, and the interaction of personality traits, activities of the individual and the environment. Accordingly, the personality is an organized and dynamic whole of interconnected emotional, cognitive, social, and behavioral patterns of the individual, which together, and relatively consistently act on the adaptation of the person to internal and external

conditions, which to some extent can shape these patterns (Repišti, 2016). McCrae and Costa (1990) view personality traits, the key concepts in personality psychology, as dimensions of individual differences in tendencies to manifest consistent patterns of thought, feeling, and activity.

There are several different personality models, but one of the most famous is The Big Five Model (Larsen and Buss, 2008), which was created under the hypothesis that personality traits can be derived from spoken, natural language. John and Srivastava (1999) gave the most commonly used representation of the Big Five Model that emphasizes the descriptive level and includes the following:

1. Extraversion vs introversion (gregariousness, activity, assertiveness, seeking excitement, positive emotions, and sociability);
2. Collaboration Vs antagonism (trust, altruism, honesty, indulgence, modesty, and compassion);
3. Conscientiousness Vs lack of focus (competence, duty, order, achievement, self-discipline, and judgment);
4. Neuroticism Vs emotional stability (anxiety, hostility, depression, impulsivity, and vulnerability); and
5. Openness Vs closedness to experiences (aesthetics, interests, ideas, unconventional values, imagination, and feelings).

Motivation for achievement is a person's orientation to strive for success in performing tasks, to continue even in failure, and to experience pride in achievement (Gill, 1986; Barjaktarević, 2008). It refers to an individual's effort to master a task, achieve outstanding results, overcome obstacles, and work better than others (Murray, 1983; Barjaktarević, 2008). McClelland, Atkinson, Clark, and Lowell (1953) studied this motive, and found that family has an immense influence on its development because children who are encouraged to be independent, ambitious, and competitive in early childhood usually later have a more developed motive for achievement (Pajević, 2003). Motivation for achievement is popularly called the competitive spirit in sports. We see it as the behavior of "achievement" in the context of competition, with social assessment as a key component. However, many people compete with themselves, trying to achieve a better result than they have achieved earlier, even when no one else evaluates that performance. Therefore, the motivation for achievement and the competitive spirit refers to the search for excellent results, as well as to the psychological ways of achieving them (Barjaktarević, 2008). Franceško, Mihić, and Bala (2002) made an important contribution to determining the structure of achievement motives. During the factor analysis of the MOP2002 scale, they determined the existence of four factors of the general motive for achievement. The authors believe that the two components of

achievement motivation are goal setting and competition with others, which corresponds to McClelland's concept of the motive of achievement. The other two factors (persistence in achieving goals and orientation towards planning) refer to the characteristics and forms of behavior, which have an instrumental function in the realization of the mentioned components. In athletes, especially professional ones, the motive of achievement is very pronounced, namely sports achievement, which is most pronounced in prestigious competitions (Pajević, 2003).

Nia and Besharat (2010) compared athletes' personality characteristics in individual and team sports. They concluded that athletes' personality characteristics are different for individual and team sports. The results of their study revealed that individual sport athletes scored significantly higher on conscientiousness and autonomy than did team sport athletes. The team sport athletes scored significantly higher on agreeableness and sociotropy than did the individual sport athletes. No significant difference was found between the two groups on neuroticism, extraversion, and openness. Candrika (2017) did research on 134 athletes and the results revealed that individual sport athletes scored significantly higher on conscientiousness and autonomy than did team sport athletes. The team sport athletes scored significantly higher on agreeableness and sociotropy than did the individual sport athletes. No significant difference was found between the two groups on neuroticism, extraversion, and openness. It can be concluded that athletes' personality characteristics are different for individual and team sports. The results of research (Raharjo, Kusuma, & Mugiyono, 2018) revealed that individual sport athletes scored significantly higher only on flow than team sport athletes. The team sport athletes scored significantly higher on conscientiousness, self-awareness, and ethics than the individual sport athletes did. No significant difference was found between the two groups on achievement, adaptability, competitiveness, visualization, intuition, goal setting, pressure management, self-efficacy, failure fear control, stress management, emotions, self-talk, empathy, relationships, aggressiveness, and impression management. The authors concluded that the personality characteristics of athletes are different between individual and team sports. The result of the research (Mohanto & Pan, 2019) revealed that there was a significant difference in personality traits between participants in team sports and individual sports except for neuroticism. It was found that individual sports participants were more self-sufficient and more introverted to team sports participants, and team sports participants were more dominant than individual sports participants. The findings of the study

(Mollazahed, Zandi, Rostamizadeh, & Kateb, 2019) showed that the athletes' score in team sports in agreement, extraversion, and task is significantly higher than individual sports. Individual athletes also had a high risk of neuroticism. The only available study examining personality differences between recreational and professional athletes was done by Host (2019). Host found that professional athletes show higher levels of personal striving for perfection (perfectionism) and setting higher goals than recreational athletes.

The result of the study (Goyal & Sharma, 2018) reveals that there was a significant difference between mean sports achievement motivation scores of individual games (27.24) and team game (26.36) players. Pavel Kumar (2015) researched motivation among individual and team sports players. He found the individual sports players had a noteworthy difference in motivation than team sports players because the individual sports players require the necessary motivation to attain excel in sports than the team sports players as a group exertion. Maryam, Parisa, and Maryam (2018) researched two hundred athletes competing nationally or internationally. The result revealed that team sports athletes have more desire for victory, while individual sports athletes are more competitive and goal-oriented. Modroño and Guillén (2016) did a study comparing motivation in 140 professional and recreational windsurfers and found no significant difference. A group of 350 male players of individual and team sports was selected to participate in a study that researched differences in achievement motivation (Bal, Singh, & Singh, 2010). The results revealed that team players scored significantly higher on achievement motivation than individual players. Mankar (2019) researched 100 individual players and 100 team players who have participated in the Inter College Tournaments in Nagyar. He found the individual players scored higher on achievement motivation than team Players. His explanation for this result was that the individual players required compulsory motivation to achieve excellence in sports than the team players with a group effort.

This research aims to answer the question: What is the role of personality traits and achievement motives in choosing sports activities, ie whether there are differences in personality traits and 4 components of achievement motivation between athletes involved in individual sports and team sports, as well as between recreational and professional athletes?

Methods

Participants

The participants of this study were 173 athletes (age range 13 – 53; $M = 26 \pm 7.8$ years) from Bosnia and Herzegovina. The sample consisted of 73 (50.3%) females. 101 athletes (58.4%) participate in individual sports, while 54 (31.2%) participate in team sports. Only 18 participants (10.4%) participate in both individual and team sports. The majority of participants in the research, 127 of them (73.4%), engage in sports only recreationally, while the remaining 40 participants (23.1%) play sports professionally. The study was conducted in compliance with the Helsinki Declaration. Participants were fully informed about the research and informed that participating in research will be taken as consent while they could withdraw from the study at any time. The average time participants needed to finish all the questionnaires was about 15 minutes.

Procedures

Following the set aim and hypotheses of this study, the empirical-nonexperimental method (survey-method) was conducted. Data were collected during the spring of 2017 by voluntary and anonymous completing the online questionnaire.

Personality traits were estimated by *Personality Inventory BFI-44* (John, Donahue, & Kentle, 1991). The questionnaire consists of 44 statements to which participants respond by assessing the degree of agreement on the Likert five-point scale with anchors of 'disagree strongly' (1) to 'agree strongly' (5); while some items are reverse-scored. The instrument is multidimensional and consists of five factors/personality traits: Extraversion (8 items), Neuroticism (8 items), Agreeableness (9 items), Conscientiousness (9 items), Openness to experiences (10 items) (Cronbach's alpha range = 0.72-0.78, Carciofo, Yang, Song, Du, & Zhang, 2016).

The self-appraisal scale *MOP2002* (Franceško et al. 2002) was applied to examine the achievement motivation in this research, with the permission of the author for the application of questionnaires for research purposes and in our premises. The questionnaire consists of 55 statements and has a form of a five-point Likert scale with anchors of 'disagree strongly' (1) to 'agree strongly' (5), (Cronbach's alpha = 0.91, Ivanišević, Vlašić, & Čolakhodžić, 2017). The instrument is multidimensional and consists of four factors: Competing with others (19 items), Persistence in achieving goals (15 items), Goal achievement as a source of satisfaction (13 items), and Orientation towards planning (8 items). All of these factors are, among others, important for successful participation in competitive sport. The scale belongs to the category of universal measuring instruments for general

achievement motive, not specified for particular spheres of life and work (Franceško, et al., 2002). In addition, a *socio-demographic questionnaire* was used in this study, which we constructed for this research. Data obtained from this non-standardized questionnaire are data on gender, age, participation in an individual or a team sport, participation in sports as a professional or a recreational athlete. The sequence of the administered questionnaires was randomly rotated so that the order of presentation was counterbalanced to some degree. The sequence of the scales used in each survey was varied.

Statistical analysis

For the processing and analysis of data obtained in this research, we used the Statistical Package for Social Sciences SPSS (v20.0, SPSS Inc., Chicago, IL). In addition to basic descriptive statistics (arithmetic mean, standard deviation, skewness and kurtosis), we applied a t-test for large independent samples after skewness and kurtosis (indicators of normality of distribution) showed the data were normally distributed. The significance level is set to 0.05, meaning that the probability of observing the differences seen in our data by chance is just 5%. Cohen's d was calculated as a measure of effect size, and interpreted as small (d = 0.2), medium (d = 0.5), or large (d = 0.8) (Cohen, 1988).

Results

Comparison of professional and recreational athletes

Table 1 shows descriptive statistics of five personality traits specifically for recreational and professional athletes. We notice that professional athletes achieved higher scores on four personality traits: Extraversion, Agreeableness,

Table 1. Descriptive statistics of personality traits of recreational and professional athletes.

Personality traits	Do you play sports professionally or recreationally?					
	N	Mean	SD	Skew	Kurt	
Extraversion	Professionally	40	3.82	.62	-.24	-.61
	Recreationally	127	3.66	.64	-.17	.01
Agreeableness	Professionally	40	4.26	.50	-.66	-.29
	Recreationally	127	4.07	.55	-.46	-.20
Conscientiousness	Professionally	40	3.78	.77	-.42	.34
	Recreationally	127	3.67	.65	-.14	-.40
Neuroticism	Professionally	40	2.63	.68	.42	.59
	Recreationally	127	2.60	.68	.17	-.21
Openness	Professionally	40	3.60	.42	-.47	.60
	Recreationally	127	3.64	.46	-.38	.11

Conscientiousness, and Neuroticism, while recreational athletes achieved higher scores on Openness. The results of skewness and kurtosis are within the normal value of the distribution in all variables.

Using a T-test for large independent samples, we examined whether these differences were statistically significant. We presented the obtained results in Table 2.

Table 2. T-test results comparing the mean values of professional and recreational athletes on personality traits.

Personality trait	t	df	p	d
Extraversion	1.42	165	.16	.25
Agreeableness	1.94	165	.05	.36
Conscientiousness	.86	165	.39	.15
Neuroticism	.22	165	.83	.04
Openness	-.51	165	.61	.09

Legend: t-test; df-degrees of freedom, p-level of statistical significance, d-Cohen's d

The obtained results showed that professional and recreational athletes do not differ statistically in personality traits ($t_E(165) = 1.4$; $p = 0.16$, $t_A(165) = 1.9$; $p = 0.05$, $t_C(165) = 0.9$; $p = 0.39$, $t_N(165) = 0.2$; $p = 0.83$, $t_O(165) = -0.5$; $p = 0.61$).

Table 3 shows descriptive statistics on four factors of achievement motivation specifically for recreational and professional athletes. We notice that professional athletes have higher scores on three factors: Competing with others, Persistence in achieving goals, and Orientation towards goal achievement, while recreational athletes have higher scores on Orientation towards planning. The results of skewness and

Table 3. Descriptive statistics of 4 factors of achievement motivation of recreational and professional athletes.

Achievement motivation factors	Do you play Sports professionally or recreationally?					
	N	Mean	SD	Skew	Kurt	
Orientation towards competing with others	Professionally	40	3.65	.59	-.23	-.26
	Recreationally	127	3.15	.73	-.23	-.47
Orientation towards goal achievement	Professionally	40	4.56	.39	-.91	1.07
	Recreationally	127	4.25	.50	-.48	-.49
Orientation towards planning	Professionally	40	3.24	.82	-.31	-.47
	Recreationally	127	3.35	.82	-.51	-.25
Persistence in achieving goals	Professionally	40	4.19	.46	-.60	-.31
	Recreationally	127	3.97	.54	-.36	-.39

kurtosis are within the normal value of the distribution in all variables.

Using a T-test for large independent samples, we examined whether these differences between professional and recreational athletes were statistically

significant. The obtained results are presented in Table 4.

Table 4. T-test results comparing the mean values of professional and recreational athletes on 4 factors of achievement motivation.

Achievement motivation factors	t	df	p	d
Orientation towards competing with others	3.88	165	.00	.75
Orientation towards goal achievement	3.55	165	.00	.69
Orientation towards planning	-.76	165	.45	.13
Persistence in achieving goals	2.31	165	.02	.44

Legend: t-test; df-degrees of freedom, p-level of statistical significance, d-Cohen's d

The results revealed that professional athletes have a more pronounced Orientation towards competition with others ($t(165) = 3.9; p < 0.001$) and an orientation towards goal achievement ($t(165) = 3.6; p = 0.001$), they are more persistent in achieving goals ($t(165) = 2.3; p = 0.02$), while there is no statistically significant difference between these two groups in Orientation towards planning ($t(165) = -0.8; p = 0.45$).

Comparison of athletes participating in individual and team sports

Table 5 shows descriptive statistics on five personality traits specifically for athletes participating in individual and team sports. We notice that athletes participating in individual sports have higher scores on four personality traits: Extraversion, Agreeableness, Openness, and Conscientiousness, while athletes involved in team sports have higher scores on Neuroticism. The results of skewness and kurtosis are within the normal value of the distribution in all variables.

Table 5. Descriptive statistics of personality traits of athletes participating in individual and team sports

Personality trait	Type of sports	N	Mean	SD	Skew	Kurt
Extraversion	Individual	101	3.70	.65	-.28	.03
	Team	54	3.67	.59	-.06	-.25
Agreeableness	Individual	101	4.16	.53	-.33	-.83
	Team	54	4.05	.54	-.32	-.73
Conscientiousness	Individual	101	3.74	.63	.12	-.41
	Team	54	3.58	.68	-.40	.28
Neuroticism	Individual	101	2.61	.67	.29	-.13
	Team	54	2.66	.60	.25	1.34
Openness	Individual	101	3.69	.47	-.38	-.04
	Team	54	3.56	.42	-.65	.69

Testing whether these differences were statistically different by Student T-test for large independent samples, we concluded that there are no statistically significant differences between athletes participating in individual and team sports on personality traits ($t_E(153) = 0.31; p = 0.76$, $t_A(153) = 1.14; p = 0.26$, $t_C(153) = 1.52; p = 0.13$, $t_N(153) = -0.51; p = 0.61$,

$t_O(53) = 1.67; p = 0.10$). We presented the obtained results in Table 6.

Table 6. T-test results comparing the mean values of athletes who participate in individual and team sports on personality traits.

Personality traits	t	df	p	d
Extraversion	.31	153	.76	.05
Agreeableness	1.14	153	.26	.21
Conscientiousness	1.52	153	.13	.24
Neuroticism	-.51	153	.61	.08
Openness	1.67	153	.10	.20

Legend: t-test; df-degrees of freedom, p-level of statistical significance, d-Cohen's d

Table 7 shows descriptive statistics on four achievement motivation factors, and specifically for athletes participating in individual and team sports. We notice that athletes participating in team sports have higher scores on two factors: Orientation towards competing with others, and Orientation towards planning, while athletes participating in individual sports have higher scores on Orientation towards goal achievement and Persistence in achieving goals. The results of skewness and kurtosis are within the normal value of the distribution in all variables.

Table 7. Descriptive statistics of 4 factors of achievement motivation of athletes who participate in individual and team sports

Achievement motivation factors	Type of sports	N	Mean	SD	Skew	Kurt
Orientation towards competing with others	Individual	101	3.11	.77	-.14	-.48
	Team	54	3.59	.58	-.24	-.20
Orientation towards goal achievement	Individual	101	4.34	.48	-.63	-.14
	Team	54	4.31	.52	-.74	-.24
Orientation towards planning	Individual	101	3.27	.79	-.37	-.33
	Team	54	3.41	.82	-.31	-.52
Persistence in achieving goals	Individual	101	4.07	.51	-.50	-.22
	Team	54	3.98	.51	-.13	-.53

Using a T-test for large independent samples, we examined whether these differences were statistically significant. We presented the obtained results in Table 8.

Table 8. T-test results comparing the mean values of athletes participating in individual and team sports on 4 factors of achievement motivation.

Achievement motivation factors	t	df	p	d
Orientation towards competing with others	-3.96	153	.00	.70
Orientation towards goal achievement	.36	153	.72	.06
Orientation towards planning	-1.02	153	.31	.17
Persistence in achieving goals	1.00	153	.38	.18

Legend: t-test; df-degrees of freedom, p-level of statistical significance, d-Cohen's d

The results revealed that athletes participating in team sports have a significantly more pronounced Orientation towards competing with others ($t(153) = -3.96; p < 0.001$) than those participating in individual sports. No statistically significant differences between these two groups were found on the remaining three achievement motivation factors ($p = 0.31 - 0.72$).

Discussion and Conclusions

Based on the results of our research, we can conclude that there are no differences in personality traits neither among professional and recreational athletes nor between athletes participating in individual and team sports. Raharjo et al. (2018) concluded that the team sports athletes scored significantly higher on conscientiousness than individual sports athletes. The result of the research (Mohanto & Pan, 2019) revealed that there was a significant difference in all personality traits between participants in team sports and individual sports except neuroticism. They found that individual sports participants were more self-sufficient and more introverted to team sports participants, and team sports participants were more dominant than individual sports participants. The findings of the study (Mollazahed et al., 2019) showed that the athletes' score in team sports in agreement, extraversion, and the task is significantly higher than individual sports. Individual athletes also had a higher risk of neuroticism. Insufficient research in this area is obvious, and the available research has mutually inconsistent conclusions. The results of our research also deviate from other research because we did not find any difference in personality traits between individual and team athletes. Such results do not lead us to a better conclusion or a greater understanding of this issue, but they tell us that more research is needed.

As for the personality differences between recreational and professional athletes, there is a single study examining personality and motivation differences between recreational and professional athletes. Host (2019) found that professional athletes display higher levels of perfectionism and higher goals than recreational athletes. This area of research is utterly neglected. Although there are studies that study recreational or professional sports, our research is the second to compare these two groups. Research on this issue is of practical importance. Namely, it is important to know whether there are differences in personality between recreational and professional athletes, and only then can we explore how personality develops when we engage in recreational or professional sports. Do people develop differently if we play sports recreationally or professionally, or perhaps a different initial personality structure leads to superior results?

Such research has its practical application in sports psychology, but also in developmental, clinical and health psychology.

At this moment, a relevant issue of science and publishing the results of scientific research arises. We, as the authors of this research, wonder if we are really among the first to be interested in this topic, or the reason that there is no research on this problem is that other authors did not find statistically significant differences and thought that their research is not valuable enough for publishing, or the editors of scientific publications had such an opinion. The answer to this question would be significant. If different authors in their research consistently do not find differences between professional and recreational athletes, then the implications of our study are different as well.

Our results revealed that professional athletes have a more pronounced Orientation towards competing with others and an orientation towards goal achievement, which we expected as being a professional athlete is all about competing and achieving goals. They are also more persistent in achieving goals than recreational athletes, while there is no statistically significant difference between these two groups in Orientation towards planning. The results also revealed that athletes participating in team sports have a significantly more pronounced Orientation towards competing with others than those participating in individual sports.

Research on achievement motivation in athletes is somewhat more numerous. Goyal and Sharma (2018) concluded that individual athletes have a higher motivation to achieve than team athletes. Kumar (2015) came to the same result and explained this difference by saying that for success in individual sports, motivation is more necessary than in team sports, where there is a diffusion of responsibilities among players. Mankar (2019) got a very similar conclusion based on his research. Maryam et al. (2018) concluded that team sports athletes desire victory more, while individual sports athletes are more competitive and goal-oriented. Bal et al. (2010) concluded the opposite of previously mentioned authors (Goyal and Sharma, 2018; Kumar, 2015; Mankar, 2019) - their research revealed that team players scored significantly higher on achievement motivation than individual players. The research done by Bal et al. (2010) is more comparable to ours. Still, more research in this field is needed to provide more comprehensible conclusions.

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