International Journal of Advanced Research and Development
ISSN: 2455-4030; Impact Factor: RJIF 5.24
Received: 01-01-2020; Accepted: 02-02-2020; Published: 01-03-2020
www.advancedjournal.com
Volume 5; Issue 2; 2020; Page No. 01-08

Investigating the impact of gender in sport motivation: Research evidence from Greece

Panagiotis Alexopoulos[1], Emmanouil Choustoulakis[2*], Dimitrios Nikoloudakis[3]
[1, 2] Department of Sports Management, University of Peloponnese, Sparta, Greece
[3] Department of Statistics and Insurance Science, University of Piraeus, Piraeus, Greece

Abstract
The basic purpose of this study was to determine and describe motivational differences related to gender in athletes in Greece. This research is of great importance because a systematic examination of how different types of motivation (i.e., intrinsic vs. extrinsic) are associated with sports engagement is imperative for sustaining interest in sports. The main research objectives were (a) to examine, whether athletes' gender affects their overall self-determination perception, and (b) to investigate the existence of significant motivational differences between athletes, related to their gender. In this study, the Sport Motivation Scale 6 (SMS-6), a revised form of the original well-known Sport Motivation Scale (SMS), was used. Demographic data were also obtained about the participants: gender, age, and parents' sports history. Results revealed a high overall level of self-determination perception for the participants. Also, athletes were more motivated by Intrinsic Motivation than by Extrinsic Motivation. These findings can help sport teams to establish a more motivating coaching design. Additionally, the improvement of self-determination perception level will help athletes to externalize their enthusiasm, boost their intrinsic motivation, and improve their performance.

Keywords: sport coaching, sport motivation, self-determination, sport motivation scale, sport performance

1. Introduction
In every domain of human organization, including professional employment, sports, and social life, the study of types and levels of motivation has been extensive. Recent studies suggest that involvement in physical activity is mediated by motivation and perceived sports competence (Ames, 1984) [1]. Motivation seems to be a complex process that influences individuals to begin, pursue, and persist in an activity (Crandall, 1980) [12]. Encouraging others to act, think and behave a certain way is often the responsibility of many people, however, motivating others can be quite challenging for coaches or teachers. One population to experience these adversities and challenges more than others are athletes (Gucciardi *et al*., 2017) [23]. It is very often, that the phenomenon of poor team performance derives from the athletes' lack of substantial intrinsic motivation, or the absence of motivational forces in the sports team environment. Hence, one of the most critical issues, when trying to improve a sports team performance, is the ability of a sport coach to perform a diagnostic analysis to measure athletes' level of motivation, and their status, regarding the intrinsic and extrinsic reinforcement toward the attainment of the team goals and objectives. Previous research has emphasized on the role of motivation in the sport coach effectiveness. Understanding motivating factors is an antecedent to the understanding of behaviour change and programming of Physical Activity. Motivation is the foundation of all athletic effort and accomplishment. Psychological attributes, such as self-confidence and the ability to cope with and interpret anxiety-related symptoms as positive are commonly accepted as being major contributors to sporting success (Hanton & Fletcher, 2005) [25]. Therefore, the ability to investigate the predictors of sport motivation and empower the athletes' motivation may be proved to be a crucial factor of a sport team performance. Unfortunately, the concept of 'motivation' has an inherently abstract nature. Often, this makes it quite hard to exploit its full potential. Also, motivation in sports acts as a predictor of the direction of athletes' effort over a prolonged period of time. Hence, it is not surprising that top-performing athletes have mastered to develop an ability to channel their energies extremely effectively. Motivation represents an internal energy force that determines all aspects of an athlete's behavior. It seems to have several levels of impact on how athletes think, feel and interact with others. Often, high motivation is widely accepted as an essential prerequisite in getting athletes to effectively fulfill their full potential.

2. Theoretical background
Deci & Ryan (1985) [13] provided a comprehensive understanding of motivational processes, for which there is considerable support in the related literature (see Deci & Ryan, 2002) [15]. The basic assumption of Self-Determination Theory is that people are innately and proactively motivated to master their social environment. The main thrust of SDT is not so much what causes intrinsic motivation, but the conditions that enhance and maintain this innate propensity to interact with the environment so as to undertake challenges and immerse oneself in the doing of an activity (Ryan & Deci, 2000) [46]. Besides, without the desire and determination of athletes to improve their performance, all of the other mental factors, such as confidence, intensity, focus, and emotions, are meaningless.
There exist numerous approaches regarding the study of the concept of motivation throughout the sciences. Some of these approaches are based on indications of positive and negative reinforcement e.g. Skinner's behaviourism (Skinner, 1968) [48], while other approaches focus on an individual's sense of mastery over a set of circumstances e.g Bandura's self-efficacy theory (Bandura, 1997) [3].

Providing a psycho-social supportive environment is crucial for influencing or mediating athletes' level of self-determination (Vallerand, 2001) [50]. Each need is an independent construct, yet the interplay and synergy between all three needs can and will influence individual motivation (Deci & Ryan, 1985) [13]. For instance, athletes may engage in an activity to play with their friends (i.e. relatedness), while another athlete may engage in the same activity to play with friends and win the game (i.e. relatedness and competence). In physical education, the implementation of experiences which support all three needs, and in turn influence an athlete's self-determination, are often considered to be of high importance (Ntoumanis, Pensgaard, Martin, & Pipe, 2004) [40].

Generally, there exist two main types of motivation in sports: intrinsic motivation (IM) and extrinsic motivation (EM). These two broad categories fall into more specific motivation sub-categories that drive an athlete's motivation towards physical acitivity. According to Andersen (2000) [2], these motives are the following:

Achievement motivation: it is closely linke with intrinsic motivation, because it relies on the performers need to fulfill an internal desire rather than to receive material rewards.

- **Affiliation motivation:** It is a drive to relate to people on a social basis. Persons with affiliation motivation perform work better when they are complimented for their favorable attitudes and co-operation.
- **Competence motivation:** it is the drive to be good at something, allowing the individual to perform high quality work. Competence motivated people strive to be creative when confronted with obstacles. They also learn from their experience.
- **Power motivation:** it is the desire to have impact on other people, to affect their behavior or emotions.

Undoubtly, success in competitive athletic environments is underpinned by attention to detail. Thus, Jones & Spooner (2006) noted that athletes who perform well, and make high achievements are often hungry for critical feedback. Indeed, throughout our experience and interaction with numerous athletes, we have found that lack of feedback from the coach is a frequent concern, and this is often especially true for the more prominent athletes on any given team. Dweck (1986) [16] argues that with the correct approach to learning, termed adaptive attitude, the athletes can achieve their potential. These positive approaches include focusing on appropriate challenging tasks, choice of task, reason for choosing tasks, and positive feedback. Together these approaches became universally known as mastery goals and performance goals. Therefore, the feedback often plays the role of extrinsic motivation for those athletes. Elijah & Eric (2012) [12] determined gender differences in participation motives to physical activity (PA) of sport science students of a university. Data was collected through questionnaires from 60 sport science students. Results showed that sport science students perceive their physical health status as fair and they are involved in diverse PA with no significant gender differences. Despite the cultural differences that exist between Central Europe and Central Africa, similar results to those found in the present study, were described among Kenyan sport science students (Rintaugu et. al., 2012) [45]. These results determined that the most important motives for male students were, in descending order, fitness, weight management, appearance, enjoyment and revitalization. For female students, the most important motives for exercise participation were enjoyment, strength and endurance, skill development and fitness, and health pressures. The least relevant motives for both males and females were stress management and competition. Also, other studies indicate that female athletes are more motivated to participate in sport by intrinsic motives rather than extrinsic motives (Colly, Berman & Van Milligen, 2005) [10]. Ryan et. al. (1997) have found several other factors which play a role in the kinds of sports an individual participates in including intrinsic motives (participating in sport for satisfaction) and extrinsic motives (participating in sport for rewards). Furthermore, motivation can act as powerful help for the children to prevent them from activities. Hence, the global trend of youth dropout of sports stresses the importance of this study both on individual and group level. The fact that the rate of children dropping out of sports by the time they are 12 or 13, and often earlier represents a major concern (Eitzen, 2009 [17]; Johnson, 2012) [27]. Furthermore, numerous studies of youth sports participation and dropout rates in several countries show similar trends (Carlman, Wagnsson, & Patriksson, 2013) [5]. This phenomenon highlights the necessity of creating a higly motivating environment for the athletes to perform in. Suggestions on how to eliminate youth drop outs and increase youth engagement include redefining sports goals away from winning towards having fun, balancing parental involvement, encouraging multiple sport participation, enabling children and youth to have more ownership over their sports experiences, decreasing the emphasis on winning, encouraging rules that enable every child to play, and beginning sport involvement at an appropriate age. Several innovative approaches to changing the atmosphere within youth sports have been proposed. Researchers have sought to find ways to modify both adults' and children's prosocial and sportsmanship behaviors, by carefully designing experiences to achieve desired benefits (Ellis, Henderson, Paisley, Silverberg, & Wells, 2004 [19]; Wells, Arthur-Banning, Paisley, Ellis, Roark, & Fisher, 2008) [53]. Gutiérrez et.al. (2018) [24] analyzed the relationships among adolescents' perceptions of motivational climate in physical education (PE) classes, students' attitudes toward PE and their motives for practicing sport activities out-of-school. Main results showed a significant relationship of mastery class climate with attitudes toward PE and intrinsic motivation for sport practicing, and performance class climate with extrinsic motivation and demotivation for sport practicing out-of-school. Also, Martin (2020) [37] suggested easily implemented ideas on how to provide athletes with meaningful instruction, skill mastery opportunities, and intrinsically motivating sport experiences from one season to the next. Physical education research has demonstrated that self-determined motivation is positively correlated with active participation/engagement (Ntoumanis, 2001, 2005), learning (Chen, 2001), and mental, psychomotor and social experiences (Vallerand, 2001) [50]. The Self-Determination Theory (SDT; Ryan and Deci, 2000) [46] proposes a personality model based on human needs to feel competent, autonomous, and related to others. SDT provides a robust model of motivation, due to the inter- and intra-relationship between motivation and psychological needs. Since the theory is related to the concepts of positive psychology and social cognitive theory, it is ever more often utilized in

empirical studies to explain and predict human actions (Perlman, 2011) [44]. According to SDT, three types of motivation are located on the Self Determination Continuum which is shown below (Figure 1). This continuum depicts a lack of motivation (amotivation), to increased motivation forms (extrinsic motivation), to self-determined motivation (intrinsic motivation). Ryan & Deci (2002) [15] suggest that the closer motivation aligns with the intrinsic end of the continuum, the more self-determined or internally regulated the individual is. On the contrary, when motivation aligns with the amotivation end of the continuum, then the individual possesses a limited, if any desire to engage or participate in a learning task (Deci & Ryan, 2000) [46]. Students who are amotivated perceive a lack of ability to achieve, thus rarely engage in an activity. There are many versions of this model, and they are all variations on and extension of the original version by Ryan & Deci (2002) [15]. Below, in Figure 1 we illustrate which types of motivation emerge in which contexts, and what their effects are on behaviors, emotions, and performance. Since motivation assessment for athletes was the goal of this research, a valid instrument that accurately examines motivation was required. Within the framework of Self-Determination Theory various scales have been developed to assess varying motivational orientations. Among these, a sport-context motivation measure, SMS, has shown to have satisfactory psychometric properties (Li & Harmer, 1996 [33]; Pelletier *et al*., 1995). The SMS was translated from the original French version, which was adapted from the academic motivation scale (AMS; Vallerand *et al*., 1992). The SMS has been developed to measure an athlete's motivation toward sport participation. It has been tested and generally accepted as being a reliable test of motivation in athletes.

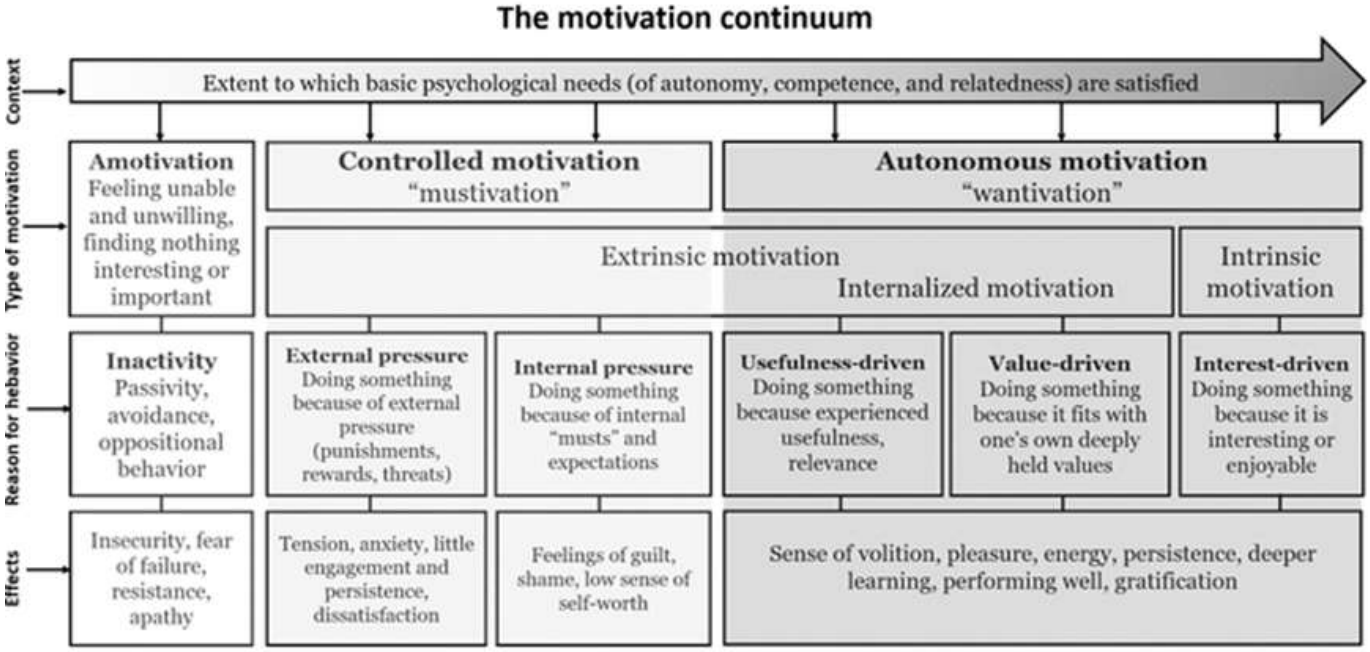

Fig 1: The Self-Determination Motivation Continuum (based on the prototype research work of Deci & Ryan, 2000) [46].

In this study, the Sport Motivation Scale 6 (SMS-6), a revised form of the original well-known Sport Motivation Scale (SMS) developed by Pelletier *et al*. (1995), was used. The revision of the original SMS was argued on three central issues: (a) the inclusion of items measuring integrated regulation on theoretical grounds (Martens & Webber, 2002) [36], (b) the revision of the wording of statistically and theoretically problematic items to improve the factorial validity of the SMS, and (c) the resolution of the lack of discriminant validity of the three IM factors. The revision led to the development of a six-factor 24-item scale (SMS-6) that represents a more parsimonious and improved fitting model, consistent with the principles of SDT. This revised form, SMS-6, was considered to be more appropriate than the original SMS, due to its potential to measure integrated regulation, which represents the most autonomous form of extrinsic motivation. Although limited research has examined integrated regulated behaviours in sport, Mallett and Hanrahan (2004) [35] showed that integrated regulation was a major source of motivation for a small group of elite track and field athletes. Therefore, an additional objective of this research was to develop a quantitative measure of integrated regulation in Greek athletes.

3. Method

3.1 Sample

Participants were recruited via an open invitation to take part in the study. A convenience self-selecting sampling approach was used, in which ethical approval was acquired prior to recruitment from the researchers. The term 'motivation' was not mentioned in the invitation to avoid preconceived bias. The survey questionnaires were handed out during several coaching sessions. The survey instrument included demographic questions, and also Likert-type questions. Absolute anonymity of the subjects was ensured. The IBM Statistical Package for the Social Sciences, SPSS Inc., version 23.0 was used for data analysis. Data were coded, and entered into the software using appropriate variable names, so as to help the researchers for future reference. Scales and Subscales data were checked for normality of distribution, based on QQ plots, skewness, and kurtosis statistics. Gender differences (male vs. female) were compared using independent samples t-tests for

intrinsic and extrinsic motivation. The level of significance was set at alpha $p<0.05$. Effect size (ES) was computed and categorized based on Cohen's (1988) recommendations.

3.2 Research intrument

The 24-item SMS-6 consists of six factor subscales (i.e., IM to know, IM to accomplish, EM for identified regulation, EM for intro jected regulation, EM for external regulation, and amotivation), with each subscale composed by four items. Each item was rated on a 5-point Likert-type scale ranging from 1 (does not correspond at all) to 5 (corresponds exactly). Higher scores indicate a higher level of motivation with a total score of 20 points being the maximum for each subscale. Internal consistency for all subscales was measured, based on Cronbach's alpha index, and it was found to be quite satisfactory ($\alpha=0.72 - 0.81$), with a mean alpha - for SMS - of 0.75 (Pelletier et.al. 1995). Numerous validation studies have been conducted (Li and Harmer, 1996 [33]; Jackson & Henderson, 1995 [26]; Martens & Webber, 2002 [36]; Chatzisarantis *et al*., 2003 [7]; Zahariadis *et al*., 2005) [55], using various statistical techniques to provide support for the internal consistency and construct validity of the SMS. A separate four-item demographic questionnaire was included to obtain demographic data about the participants: gender, age, and parents' sports history. For an in-depth presentation of the questionnaire used, please see Appendix at the end of this paper.

3.3 Procedure

A total of 362 participants expressed a desire to take part in the study and were given a personal details (demographic) form and the research questionnaire (SMS-6) with instructions for completion. Specifically, the participants were instructed not to consider the questions in great depth, and to respond to the questions honestly. They were given 4 weeks to complete the measures in which reminders were sent out prior to the deadline and non-returners were contacted twice after the closing date. Finally, 322 out of the 362 participants completed the research instruments, resulting in a rather low dropout percentage (11%). Participation was voluntary, and informed consent was obtained prior to the administration of the SMS questionnaire. Participants were briefed on the objectives and their ethical rights and were reminded that they were not obliged to respond to any of the questions if they were not comfortable doing so. Participants were free to withdraw at any time and were told that their withdrawal would not result in any penalty.

4. Results

The research sample was constituted of 322 Greek athletes (221 male athletes; 68.6%, 101 female athletes; 31.4%) from 31 unique sport clubs all located in the prefecture of Ilia, in the Peloponnese peninsula, Greece. Throughout the research process, three levels of sport participation were reported: club level (63%), state level (23%), and national level (14%), providing a representative sample, regarding the various competitive sport performance levels. Also, the most common sports participated in the research were Soccer (171 athletes, 53.1%), Basketball (109 athletes, 33.9%), Volleyball (31 athletes, 9.6%), and Water Polo (11 athletes, 3.4%). Participants ranged in age from 16 to 24 years (M=22.5, SD=2.7). Regarding the demographic variable 'parents' sport history', 218 athletes (67.7%) responded that their parents had none or minor sport history, and only 104 athletes (32.3%) reported parents' previous sport history.

The strengths of the components (Intrinsic, Extrinsic, and Amotivation) that combine to determine a participant's SDI, were examined. Moreover, ancillary data were collected to examine any possible demographic relationship to motivation scores Additional analysis of the demographic data was conducted to explore any anomalies within demographics that may provide insight on athletes' motivation. Special attention was paid to the examination of motivational differences between male and female athletes. Regarding the distribution normality test for the SMS Scales, the Q-Q plots and the Kolmogorov-Smirnov tests, reported that all scales were normally distributed. Hence, parametric tests for the mean scores analyses were chosen.

The SMS-6 returned an overall Self Determination Index (SDI) for each participant in the study which represents an overall measure of an athlete's motivation. SDI is calculated using the following formula ((2*IMK) + IR) - (ER + (2*AM)). For the purpose of this study, SDI was used as the primary measure of self-determination. The overall SDI mean of 10.52 (SD=0.989) was found to be slightly higher than that obtained from the application of the SMS-6 to other populations, which typically returns a mean of approximately 10. These results reveal a higher overall perception of self-determination for the participants of this research than that of other researches.

The SMS-6 Scales descriptive statistics (Table 1) revealed that athletes were more motivated by Intrinsic Motivation (M=4.21, SD=0.354) than by Extrinsic Motivation (M=4.21, SD=0.273). The Amotivation scale had the lowest score (M=2.33, SD=0.910).

Table 1: Sms-6 Scales Descriptives Statistics

SMS: 6 Scales: Descriptive Statistics													
	N Statistic	Range Statistic	Minimum Statistic	Maximum Statistic	Sum Statistic	Statistic	Mean Std. Error	Std. Deviation Statistic	Variance Statistic	Statistic	Skewness Std. Error	Kurtosis Statistic	Std. Error
Intrinsic	322	2	3	5	1355	4,21	,020	,354	,125	-,199	,136	-,123	,271
Motivation													
Extrinsic	322	2	3	5	1283	3,98	,015	,273	,075	-,068	,136	,189	,271
Motivation													
Amotivation	322	**4**	1	5	751	2,33	,051	,910	,828	,707	,136	,402	271
Valid N (listwise)	322												

The SMS-6 Subscales descriptive statistics (Table 2) reported the following measures for the dimensions that combine to shape the overall sport motivation: Amotivation (M=2.33, SD=0.910), EM; External Regulation (M=3.25, SD=0.665), EM; Introjected Regulation (M=3.88, SD=0.552), EM; Identified Regulation (M=4.65, SD=0.459), EM; Integrated Regulation (M=4.15, SD=0.594), IM; Intrinsic Motivation (M=4.21, SD=0.354).

Table 2: SMS-6 Subscales Descriptive Statistics

SMS-6 Subscales Descriptive Statistics													
	N Statistic	Rage Statistc	Minimum Statistic	Maximum Statistic	Sum Statistic	Statistic	Mean Std. Error	Std. Deviation Statistic	Variance Statistic	Statistic	Skewness Std. Error	Statistic	Kurtosis Std. Error
Amotivation	322	4	1	5	751	2,33	,051	,910	,828	,707	,136	,402	,271
External Regulation	322	3	9)	5	1047	3,25	,037	,665	,442	,198	,136	,070	,271
Introjected Regulation	322	3	9)	5	1249	3,88	,031	,552	,304	-,645	,136	1,193	,271
Identified Regulation	322	I	3	5	1499	4,65	,026	,459	,211	-1,188	,136	,760	,271
Integrated Regulation	322	3	I	5	1336	4,15	,033	,594	,352	-,259	,136	-,259	,271
Intrinsic Motivation	322	9)	3	5	1355	4,21	,020	,354	,125	-,199	,136	-,123	,271
Valid N (listwise)	322												

Also, Intrinsic and Extrinsic Motivation dimensions were examined according to gender (Table 3). The elements of extrinsic motivation (EM; External Regulation, Introjected Regulation, Introjected Regulation, Identified Regulation, Integrated Regulation) were also checked for possible gender differences. The results revealed that no significant differences were found for any of the motivational dimensions (Extrinsic Motivation, Intrinsic Motivation). More analytically, there was no significant gender effect for Intrinsic Motivation, t (320) =1.225, p=0.222, despite male athletes (M=4.22, SD=0.353) attained higher scores than female athletes (M=4.17, SD=0.355). Also, there was no significant gender effect for Extrinsic Motivation, t (320)=0.197, p=0.847, since male athletes (M=3.98, SD=0.269) attained similar scores with female athletes (M=3.99, SD=0.282). Regarding the elements of Extrinsic Motivation, no significant gender effects were found for any of them. Extrinsic Motivation Subscales mean scores for male and female athletes were almost similar (see Table 3). This fact reveals a similarity in athletes perception of motivation in their sport activity.

Table 3: Intrinsic and Extrinsic Motivation according to gender

Intrinsic and Extrinsic Moticati on according to gender					
		HI	SD	T	P
Moticad on (Total)	htinsic	4.21	0.469	1.345	0267
	Extrinsic	3.98	0.487		
al Intrinsic Motilati on between gender	Male	4.22	0.353	1.225	0.222
	Female	4.17	0.355		
E, M Extrinsic Motication betwe engender	Male	3.98	0.269	0.197	0.847
	Female	3.99	0/82		
E.M Irgegrated Reguladon	Male	4.17	0.591	0.754	0.452
	Female	4.11	0.600		
E.M Identified Regulation	Male	4.65	0.477	0.495	0.621
	Female	4.67	0.418		
E. M Introjected Regulation	Male	3.86	0.572	0.867	0.387
	Female	3.92	0.504		
E.M External Regulation	Male	3.25	0.637	0.059	0.953
	Female	3.2 5	0.725		

IM = intrinsic motivation; EM = Extrinsic Motivation

In-depth descriptive statistics for all the items of the research questionnaire are provided (Table 4), that give a more detailed analysis of the motivational characteristics of male and female athletes of this research.

Table 4: Intrinsic and Extrinsic Motivation between genders

Item	Male		Female		Total	
Why do you practice sports?	**M**	**SD**	**M**	**SD**	**M**	**SD**
1. For the excitement I feel when I am really involved in the activity	4,22	0,73	4,18	0,80	4,20	0,75
2. Because it's part of the way in which I've chosen to live my life	4,17	0,68	4,10	0,69	4,15	0,68
3. Because it is a good way to learn lots of things which could be useful to me in other areas of my life	4,64	0,55	4,63	0,58	4,64	0,56
4.Because it allows me to be well regarded by people that I know	3,22	0,79	3,30	0,89	3,24	0,82
5. I don't know anymore; I have the impression of being incapable of succeeding in this sport	2,37	1,00	2,18	1,00	2,31	1,00
6. Because I feel a lot of personal satisfaction while mastering certain difficult training techniques	4,24	0,76	4,15	0,77	4,21	0,76
7. Because it is absolutely necessary to do sports if one wants to be in shape	3,94	0,76	4,00	0,66	3,96	0,73
8. Because it is one of the best ways I have chosen to develop other aspects of my life	4,58	0,56	4,57	0,57	4,58	0,56
9. Because it is an extension of me	4,18	0,66	4,10	0,70	4,16	0,67
10. Because I must do sports to feel good about myself	3,81	0,78	3,93	0,70	3,84	0,76
11. For the prestige of being an athlete	3,28	0,76	3,29	0,94	3,28	0,82

12. I don't know if I want to continue to invest my time and effort as much in my sport anymore	2,38	1,02	2,41	1,15	2,39	1,06
13. Because participation in my sport is consistent with my deepest principles	4,18	0,66	4,08	0,67	4,15	0,66
14. For the satisfaction I experience while I am perfecting my abilities	4,19	0,73	4,19	0,77	4,19	0,74
15. Because it is one of the best ways to maintain good relationships with my friends	4,71	0,50	4,70	0,54	4,71	0,51
16. Because I would feel bad if I was not taking time to do it	3,84	0,73	3,85	0,77	3,84	0,74
17. It is not clear to me anymore; I don't really think my place is in sport	2,37	1,00	2,18	1,00	2,31	1,00
18. For the pleasure of discovering new performance strategies	4,25	0,74	4,17	0,78	4,23	0,75
19. For the material and/or social benefits of being an athlete	3,28	0,83	3,25	0,82	3,27	0,83
20. Because training hard will improve my performance	4,65	0,55	4,78	0,44	4,69	0,52
21. Because participation in my sport is an integral part of my life	4,13	0,67	4,17	0,68	4,14	0,67
22. I don't seem to be enjoying my sport as much as I previously did	2,38	0,95	2,20	0,99	2,33	0,97
23. Because I must do sports regularly	3,86	0,80	3,89	0,69	3,87	0,76
24. To show others how good I am at my sport	3,24	0,79	3,16	0,85	3,21	0,81

5. Results and Discussion

Results revealed a rather high overall level of self-determination perception for the athletes participated in this research. Previous related research has shown slightly lower SDI scores. This can be explained by the existence of a supportive psycho-social environment in the sport teams. This fact seems to be crucial for influencing or mediating athletes' level of self-determination. Regarding the differences in self-determination perception Also, not significant different levels of self-determination among male and female athletes were found. Moreover, no significant gender differences in any of the dimensions of intrinsic or extrinsic motivation reveals a similarity in the self-determination perception for male and female athletes. These results are in contrast with results of several previous research that reported higher levels of extrinsic and intrinsic motivation for male athletes (Gill *et al*., 1983; Klint & Weiss, 1986 [30], Ashford *et al*., 1993). The reason why male athletes traditionally reported higher intrinsic and extrinsic motivation is that male athletes, in order to increase self-competence, learned new techniques, strategies, and skills to become more successful, which in turn is related to the IM subscales of IM to know and IM to accomplish. In addition, a possible explanation of the not significant motivational differences among male and female athletes, it is that in developed countries, sports are not regarded anymore as a predominantly male domain. Nowadays, in Greece where this research took place, social etiquette, religious beliefs, and cultural norms do not require females anymore to be feminine, friendly, and health- and beauty-conscious. This is translated into a growing need for female athletes to be physically competent (Klint & Weiss, 1986) [30]. However, several earlier studies report that female athletes exhibited higher IM than their male counterparts (Chantal *et al*., 1996; Fortier *et al*., 1995 [20, 43]; Pelletier *et al*., 1995). Conluding, it is very important to identify the most important motives for practicing in sports among male and female athletes so as to facilitate the process of addressing the core problematic situation related to these motives. Future studies may benefit from mixed method designs which examine features of the Self-Determination Theory and their influence on each psychological need and type of motivation. The conclusions of this study could help sport researchers, coaches, and athletes to the improvement of motivational design in modern sport teams.

6. Appendix: Sport Motivation Scale 6 (SMS-6)

Using the scale below, please indicate to what extent each of the following items corresponds to one of the reasons for which you are presently practising your sport.

Table 5

1	2	3	4	5
Does not correspond at all	Corresponds a little	Corresponds moderately	Corresponds a lot	Corresponds exactly

Table 6: Why do you practice your sport?

1. For the excitement I feel when I am really involved in the activity	1	2	3	4	5
1. Because it's part of the way in which I've chosen to live my life	1	2	3	4	5
2. Because it is a good way to learn lots of things which could be useful to me in other areas of my life	1	2	3	4	5
3. Because it allows me to be well regarded by people that I know	1	2	3	4	5
4. I don't know anymore; I have the impression of being incapable of succeeding in this sport	1	2	3	4	5
5. Because I feel a lot of personal satisfaction while mastering certain difficult training techniques	1	2	3	4	5
6. Because it is absolutely necessary to do sports if one wants to be in shape	1	2	3	4	5
7. Because it is one of the best ways I have chosen to develop other aspects of my life	1	2	3	4	5
8. Because it is an extension of me	1	2	3	4	5
9. Because I must do sports to feel good about myself	1	2	3	4	5
10. For the prestige of being an athlete	1	2	3	4	5
11. I don't know if I want to continue to invest my time and effort as much in my sport anymore	1	2	3	4	5
12. Because participation in my sport is consistent with my deepest principles	1	2	3	4	5
13. For the satisfaction I experience while I am perfecting my abilities	1	2	3	4	5
14. Because it is one of the best ways to maintain good relationships with my friends	1	2	3	4	5
15. Because I would feel bad if I was not taking time to do it	1	2	3	4	5
16. It is not clear to me anymore; I don't really think my place is in sport	1	2	3	4	5
17. For the pleasure of discovering new performance strategies	1	2	3	4	5
18. For the material and/or social benefits of being an athlete	1	2	3	4	5
19. Because training hard will improve my performance	1	2	3	4	5
20. Because participation in my sport is an integral part of my life	1	2	3	4	5

21. I don't seem to be enjoying my sport as much as I previously did	1	2	3	4	5
22. Because I must do sports regularly	1	2	3	4	5
23. To show others how good I am at my sport	1	2	3	4	5

Table 7: Key

Amotivation	5,12,17,22	Identified Regulation	3,8,15,20
External Regulation	4,11,19,24	Integrated Regulation	2,9,13,21
Introjected Regulation	7,10,16,23	Intrinsic Motivation	1,6,14,18

7. Acknowledgments
Authors would like to thank all the participants, who volunteered to help out with the survey, for their substantial contribution in the fulfillment of this research.

8. References

1. Ames C. Competitiveness versus co-operative reward structures: The influence of individual and group performance factors on achievement attributions and affect. In R. Ames & C. Ames (Ed) Research on motivation in educational student motivation New York: Academic press, 1984, 171-207.
2. Andersen M. Doing sport psychology. Champaign, IL: Human Kinetics, 2000
3. Bandura A. Self-efficacy: The exercise of control. New York: W.H. Freeman, 1997
4. Bond J, Sargent G. Concentration skills in sport: An applied perspective. In Morris, T., & Summers, J. (Eds.) Sport psychology: Theory, applications and issues (2nd Ed.)(pp. 388-422). Milton, QLD: Wiley, 2004.
5. Carlman P, Wagnsson S, Patriksson G. Causes and consequences of dropping out from organized youth sports. Swedish Journal of Sport Research. 2013; 1:26-54.
6. Chantal Y, Guay F, Debreva-Martinova T, Vallerand RJ. Motivation and elite performance: an exploratory investigation with Bulgarian athletes. Int J Sport Psychol. 1996; 27:173-182
7. Chatzisarantis NLD, Hagger MS, Biddle SJH, Smith B, Wang JCK. A meta-analysis of perceived locus of causality in exercise, sport, and physical education contexts. Journal of Sport and Exercise Psychology. 2003; 25:284-306.
8. Chen A. A theoretical conceptualization for motivation research in physical education: An integrated perspective. Quest. 2001; 2:35-58.
9. Cohen J. Statistical power analysis for the behavioral sciences (2nd ed.). Hillsdale: Lawrence Earlbaum Associates, 1988.
10. Colly A, Berman E, Van Milligen L. Age and gender differences in young peoples' perception of sport participants. 2005; 23:193-206.
11. Cook D. Measuring motivational characteristics of courses: Applying Keller's instructional materials motivation survey to a web-based course, Academic Medicine. 2009; 84(11):1505-1509.
12. Crandall VC. Sex Differences in Expectancy of Intellectual and Academic Reinforcement. In C.P. Smith (Ed). Achievement- related motives in children New York: Russell Sage, 1980, 11-45,
13. Deci E, Ryan R. Intrinsic motivation and self-determination in human behaviour. New York: Plenum Press, 1985.
14. Deci E, Ryan R. The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. Psychological Inquiry. 2000; 11:227-268.
15. Deci E, Ryan R. Handbook of self-determination research. Rochester, NY: The University of Rochester Press, 2002.
16. Dweck C, Motivational processes affecting learning, American Psychologist. 1986; 41(10):1040-1048.
17. Eitzen DS, Sage GH. Sociology of North American sport. Boulder, CO: Paradigm Publishers, 2009.
18. Elijah G, Eric D. Motivational gender differences in sport and exercise participation among university sport science students. Journal of Physical Education and Sport. 2012; 12:180-187.
19. Ellis GD, Henderson HL, Paisley K, Silverberg KE, Wells MS. Bringing sportsmanship back to your youth sports leagues. Parks & Recreation. 2004; 39(6):47-51.
20. Fortier MS, Vallerand RJ, Brière NM, Provenchen PJ. Competition and recreation sport structures and gender. A test of their relationship with sport motivation. International Journal of Sport Psychology. 1995; 20:24-39.
21. Foster S. Peak performance coaching: Bringing out the best in people at work, on the stage, and in life. Ventura, CA: Executive College Press, 2008.
22. Gordon S. Sport and business coaching: Perspective of a sport psychologist. Australian Psychologist. 2007; 42:271-282.
23. Gucciardi DF, Stamatis A, Ntoumanis N. Controlling coaching and athlete thriving in elite adolescent netballers: the buffering effect of athletes' mental toughness. J. Sci. Med. Sport. 2017; 20:718-722.
24. Gutiérrez M, Tomás J, Calatayud P. Determinants of the adolescents' sports practice out-of-school. Revista Iberoamericana de Psicologia del Ejercicio y el Deporte. 2018; 13:91-100.
25. Hanton S, Fletcher D. Organizational stress in competitive sport: more than we bargained for? International Journal of Sport Psychology. 2005; 36:273-283.
26. Jackson E, Henderson K. Gender–based analysis of leisure constraints. Leisure science. 1995; 17(1):31-51.
27. Johnson JA. Understanding the thoughts and attitudes related to participation in youth sports. PCOM Psychology Dissertations, 2012, 225.
28. Jones G, Spooner K. Coaching high achievers. Consulting Psychology Journal: Practice and Research. 2006; 58:40-50.
29. Keller JM. Development and use of the ARCS model of instructional design, Journal of Instructional Development. 1987; 10(3):2-10.
30. Klint KA, Weiss MR. Dropping in and dropping out: Participation motives of current and former youth gymnasts. Can J Appl Sport Sci, 1986; 11:106-114.
31. Krane V, Williams J. Psychological characteristics of peak performance. In J. Williams (Ed.), Applied sport psychology New York: McGraw Hill, 2006, 207-227.
32. Lee MT, Raschke RL. Understanding employee motivation and organizational performance: arguments for a set-theoretic approach. J Innov, 2016.
33. Li F, Harmer P. Testing the simplex assumption

underlying the sport motivation scale: A structure equation modeling analysis. Research Quarterly for Exercise and Sport. 1996; 67:396-405.
34. Loehr J. Mental toughness training for sports: Achieving athletic excellence. New York: Plume, 1999.
35. Mallett C, Hanrahan S. Elite athletes: Why does the 'fire' burn so brightly? Psychology of Sport and Exercise. 2004; 5:183-200.
36. Martens M, Webber S. Psychometric properties of the Sport Motivation Scale: An evaluation with college varsity athletes from the U.S., Journal of Sport Exercise and Psychology. 2002; 24:254-270.
37. Martin N. Fostering Motivation: Understanding the Role Coaches Play in Youth Sport. Strategies. 2020; 33:20-27. 10.1080/08924562.2019.1680328.
38. Morris T. Summers J. Sport psychology: Theory, applications and issues (2nd Ed.). Milton, QLD: Wiley, 2004.
39. Ntoumanis N. A self-determination approach to the understanding of motivation in physical education. British Journal of Education Psychology. 2001; 71:225-242.
40. Ntoumanis N, Pensgaard A, Martin C, Pipe K. An idiographic analysis of amotivation in compulsory school physical education. Journal of Sport and Exercise Psychology. 2004; 26:197-214.
41. Ntoumanis N. A prospective study of participation in optional school physical education using a self-determination theory framework. Journal of Educational Psychology. 2005; 97:444-453.
42. Orlick T. Psyching for sport. Champaign, IL: Human Kinetics, 1986.
43. elletier L, Tuson K, Fortier M, Vallerand R, Brikre N, Blais M, *et al*. Toward a New Measure of Intrinsic Motivation, Extrinsic Motivation, and Amotivation in Sports: The Sport Motivation Scale (SMS). Journal of Sport & Exercise Psychology, 1995, 17. 10.1123/jsep.17.1.35.
44. Perlman D. Examination of self-determination within the sport education model, Asia-Pacific Journal of Health, Sport and Physical Education. 2011; 2(1):79-92.
45. Rintaugu EG, Ngetich ED. Motivational Gender Differences in Sport and Exercise Participation among University Sport Science Students. Journal of Physical Education and Sport. 2012; 12(2):180-87.
46. Ryan R, Deci E. Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. American Psychologist. 2000; 55:68-78.
47. Scully D, Clarke J. Gender Issues in Sport Participation. In J. Kremer and S. Ogle (Eds). Young people involvement in sport London, Rout ledge, 1997, 25-26.
48. Skinner B. The Technology of Teaching. New York: Meredith Corporation, 1968.
49. Terry PC. Mood and emotions in sport. In Morris, T, and Summers, J. (Eds.) Sport psychology: Theory, applications and issues (2nd Ed.) Milton, QLD: Wiley, 2004, 48-73,
50. Vallerand RJ. A hierarchical model of intrinsic and motivation in sport and exercise. In G.C. Roberts (ed.) Advances in Motivation in Sport and Exercise Champaign: Human Kinetics, 2001, 263-320.
51. Vallerand RJ. Toward a hierarchical model of intrinsic and extrinsic motivation. In MP Zanna (Ed.), Advances in experimental social psychology. San Deigo: Academic Press, 1997, 271-360.
52. Weinberg R, Gould D. Foundations of sport and exercise psychology (4th Ed.). Champaign, IL: Human Kinetics, 2007.
53. Wells M, Arthur-Banning S, Paisley K, Ellis G, Roark M, Fisher K, *et al*. good (youth) sports: Using benefits-based programming to increase sportsmanship. Journal of Park and Recreation Administration. 2008; 26(1):1-21.
54. Woodman T, Hardy L. The relative impact of cognitive anxiety and self-confidence upon sport performance: a meta-analysis. Journal of Sports Sciences. 2003; 21:443-457.
55. Zahariadis P, Tsorbatzoudis H, Grouios G. The Sport Motivation Scale for Children: Preliminary analysis in physical education classes. Percept Motor Skill. 2005; 101(1):43-54.