

# Analysis of Self-Determined Motivation in Basketball Players through Goal Orientations

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## ABSTRACT

*The purpose of this study was twofold. Firstly to examine the relations between the different constructs that defines Nicholls' Achievement Goal Theory and Deci and Ryan's self-determination theory. Secondly to analyse the differences that exist between them with respect to the socio-demographic variables gender and age. A sample of 292 federated basketball players from the Region of Murcia (Spain) with ages between 14 and 18 years old was used. In addition, Castilian versions of The Perception of Success Questionnaire (POSQ) and the Sports Motivational Scale (SMS) were administered. Three statistical analyses were employed, a descriptive analysis, a correlation analysis and a regression analysis. The results showed a positive relation between ego orientation, extrinsic motivation and amotivation. The motivational relations between both theories and the differences with respect to gender and age are discussed. We have found out that mainly gender and also age differences are strong predictors of ego orientation, extrinsic motivation of external regulation and amotivation. We can also confirm that extrinsic motivation of external regulation positively predicts ego orientation and a decrease of task orientation. The results ratify the use of the Spanish version of the SMS to measure different types of motivation within the sports context.*

**Key words:** Sport, Perception of success, Sports Motivational, adolescents, adherence to sport, task orientation

## Introduction

Sports practice contributes to the psychological and social development of the individual by means of the creation of an ideal environment for the achievement and learning of behaviours and attitudes. However, despite the above mentioned, research shows that during adolescence the rates of sports dropout rise and the level of moderate and vigorous physical activity decreases<sup>1</sup>. During this period, attitudes and life patterns begin to settle<sup>2</sup>. This is important for either the consolidation and promotion of sports practice and the adoption of a healthy lifestyle, or, on the contrary for the complete abandonment of physical activity<sup>3</sup>.

Different studies have shown how relevant the intensity and the direction of the reasons for practicing are in the adherence to sport<sup>3</sup>. Castillo et al.<sup>4</sup> state that a conceptual frame that helps us understanding the processes by which young people either practice sport or abandon it, is the social cognitive theory of achievement goal. Athletes are motivated to achieve success by showing compe-

tence and ability<sup>5,6</sup>. The findings emphasize the need to analyse the motivational orientations in this stage.

The majority of the studies analyzing the psychological aspects in the sports field, are supported in two motivational theories, the Achievement goal<sup>5</sup> and Self-determination theories<sup>7-9</sup>. Achievement goal theory pursues the analysis of the different dispositional and environmental factors that have an influence on the achievement motivation of athletes. Physical activity can be seen as a situation in which there is a need for achievement and in which athletes try to reach a goal where their demonstration of competence or ability is important.

This theory is based on the existence of two types of dispositional goal orientations that are created due to social influence, reflecting the criterion by which the subjects judge their own competence and by which, subjectively, define the success or failure in that achievement context. This is how mastery-oriented goals (task-orientation) and competitive or result-oriented goals (ego-ori-

entation) emerge. The probability of using one or the other depends on situational, social and personal factors<sup>10</sup>. So, when the goal is oriented towards learning and towards the execution of a task, the subjects judge their level of ability by comparing it with themselves. That is to say, the success is defined by the personal improvement and the mastery of the task, with the perception of ability being auto referential and dependent on personal progress.

On the other hand, when dealing with a competitive goal (ego), by comparing themselves with the others, the subjects judge whether they are competent or not. In this respect, the success depends on the subjective valuation resulting from the comparison between their own ability with that of the others. In addition, success is related with beating the rivals and showing greater ability<sup>10,11,6</sup>, and even with using deceptive techniques to achieve a higher social status<sup>10</sup>. However, a decline in motivation towards the practice of sport may occur after the first personal failures appear<sup>12</sup>.

These orientations are not dichotomous but orthogonal between them<sup>10</sup>. When measuring motivational orientation, we can find athletes who are both task and ego oriented. Those young athletes who have high levels of both orientations exhibit the best of the combinations<sup>13</sup>.

Authors such as Harwood et al.<sup>14</sup> point out that there are more types of goal orientation. Schilling and Hayashi<sup>15</sup> and Stuntz and Weiss<sup>16</sup> have identified the social approval goal orientation as a third orientation where the desire to be socially accepted through the conformity to the norms while practicing sport is highlighted.

The theory of self-determination is understood as a continuum and is focused on how intrinsic motivation influences people to develop, persevere and even to compete<sup>17</sup>. Three different levels of self-determination are established. From a greater to a lesser degree, conduct can be intrinsically motivated, extrinsically motivated or amotivated. Intrinsic motivation (motivation that comes from internal sources) refers to the fact of doing an activity for itself and the pleasure and satisfaction derived from participation without obtaining any rewards. The activity is regarded as an aim in itself<sup>7,8</sup>. Within this type of motivation, Vallerand et al.<sup>18</sup> distinguish three categories, namely, intrinsic motivation to know, intrinsic motivation to accomplish and intrinsic motivation to experience stimulation.

On the other hand, extrinsic motivation refers to behaviours regulated by external means or sources. According to Deci and Ryan<sup>7,8</sup>, there are different types of extrinsic motivation that differ in their degree of self-determination. They have been arranged from a greater to a lesser degree of self-determination. These are identified regulation, introjected regulation and external regulation. The third type of motivation is called amotivation. Amotivated individuals do not have the intention of achieving anything and, as a consequence, it is likely that the activity is disorganized and accompanied by feelings of frustration, fear or depression<sup>9</sup>. That is to say, subjects feel incompetent and uncontrolled over

their own actions since they are neither intrinsically nor extrinsically motivated<sup>19,20</sup>.

Therefore, taking into account the above mentioned, intrinsic motivation is the most self-determined type of motivation, followed by identified, introjected, external and amotivation which represents the lowest level of self-determination<sup>21</sup>. Some of the studies that have verified the relations existing between dispositional goal orientations and self-determination levels<sup>22–24</sup> found out that task orientation is positively related with intrinsic motivation in both genders.

Therefore, the objective of this research is twofold, on the one hand to analyze the relations existing between the dispositional goal orientations and the self-determination levels and on the other hand, to study the differences that exist according to the gender and age of the practitioners.

## Method

### Sample

In this study a total of 292 basketball players with ages between 14 and 18 years (M=16.51; DT=0.88) participated. 202 of these participants are male (M=16.51; DT=0.80) and 90 are female (M=17.12; DT=0.79)

### Instruments

The validated version of Perception of Success Questionnaire (POSQ)<sup>25–27</sup> to the Spanish context was used<sup>10</sup>. This instrument was prepared in order to measure the dispositional orientation of the achievement goals within the sports environment. It is composed of 12 items, six of them have to do with dispositional orientation towards the Task (for instance, „I work hard”) and the other six items are Ego-oriented (for example, „I am the best”). The answers are closed and are gathered in a Likert scale that oscillates between *totally disagree* (0) and *totally agree* (100). Previous studies have shown the exploratory and confirmatory validity of the factorial structure in two subscales, as well as its reliability within the field of sport and physical activity mainly in competition sport<sup>10, 28–32</sup>, with values  $\alpha=0.90$  to  $\alpha=0.72$  (subscale task) and  $\alpha=0.94$  to  $\alpha=0.73$  (subscale ego).

The version of the *The Sport Motivation Scale: SMS*, validated to Castilian was used<sup>33,34</sup>. It is composed of 28 items that measured the different types of motivation established by the Self-Determination theory<sup>7</sup> suggesting the multidimensional explanation of motivation. It is a scale that evaluates the intrinsic motivation of a male/female athlete, extrinsic motivation and amotivation. It is composed of three types of intrinsic motivation: to know, to accomplishment and to experience stimulation; three types of extrinsic motivation: external, introjected and identified regulation; and amotivated conduct<sup>35,36</sup>. The answers were collected in a Likert scale oscillating between (1) *it doesn't correspond at all* to (7) *it corresponds; the average is (4), it more or less corresponds*. Previous studies have demonstrated the confirmatory and explor-

atory validity of the factorial structure of seven subscales, as well as its reliability within the field of sport and physical activity<sup>35,37–41,33</sup>, with Cronbach Alpha values alternating between  $\alpha=0.71$  and  $\alpha=0.92$ .

### Procedure

The Basketball federation from Murcia and the different clubs were asked for permission by means of a letter. The objectives and the procedure of this research were explained in this letter. It was also accompanied by a sample of the instrument. The questionnaire was administered by the researchers during the different training sessions of the participating teams and was given out the day before the competition. The participants were informed of the objective of the study, confidentiality of the answers and handling of data. They were also told that participation was voluntary and that there not right or wrong answers asking them to answer with sincerity and honesty.

### Statistical analysis

The structures underlying the questionnaires used in this research have been consistently determined in the literature. Therefore, the psychometric properties have been analyzed following the confirmatory factor analysis (CFA) and using the maximum likelihood method of the AMOS 18.0 program. In order to either accept or reject a model it is more appropriate to use a combination of different indexes<sup>42</sup>. Hence, we have taken into account some of the most used indexes throughout this research namely chi-squared random variables divided by their respective degrees of freedom ( $\chi^2/gL$ ), the goodness-of-fit index (GFI), the Root mean square residuals (RMSR), the Comparative fit index CFI and the Root Mean Square Error of Approximation (RMSEA). The variable  $\chi^2$  indicates the resemblance of those observed with the ones found in the hypothetical model, but, as it is very sensitive to the sampling, authors such as Jöreskog and Sörbom<sup>43</sup> recommend that it is completed with  $c^2/gL$ .

According to this, the values which are lower than 2, denote a very good adjustment to the model, and the ones below 5 are considered acceptable<sup>44,45</sup>. In the RMSR index, values that are equal or inferior to 0.10<sup>46</sup> are accepted. Values below 0.08 indicate a good adjustment to the model, and values that are inferior to 0.06 denote an excellent adjustment. Finally, values above 0.90 in the GFI and CFI<sup>47</sup> indexes designate a good adjustment to the models. For the RMSEA, values between 0.5 and 0.10 (ideally equal or less than 0.08)<sup>43,46</sup> are regarded as acceptable. The reliability of each subscale originally proposed by the authors has been calculated by means of the Cronbach Alpha internal consistency index. The relations between the variables have been explored using bivariate correlations and Pearson coefficient in order to prove the presence of specific forms of association. For the analysis of gender differences, the Student's T test has been used for independent sample. Finally, to analyse gender and age prediction with respect to the factors of the two scales (POSQ and SMS), a linear regression anal-

ysis has been employed. Given the fact that the data were gathered in two scales with different scores they had to be converted into typified scores for their later analysis. To carry this out, the statistical packet SPSS version 17.0 for Windows was used.

## Results

### Psychometric properties of the instruments

The internal consistency analysis of the Perception of Success Questionnaire (POSQ) is satisfactory for both the subscale Ego ( $\alpha>0.90$ ) and the Task ( $\alpha>0.81$ ). The homogeneity analysis suggests that there are no overlaps of items between the two theoretical dimensions. The model that has been put into practice predicts the existence of two latent variables: dispositional goal orientation towards the Ego (*Ego*) and dispositional goal orientation towards the task (*Task*). This underlies the 12 items and provides an account of the covariances observed between them. The Chi squared test was significant ( $\chi^2_{(53)}=188.90$ ;  $p=0.000$ ), with the original model showing an adequate goodness of fit index as the results were:  $\chi^2/gL=3.56$ ;  $GFI=0.91$ ;  $CFI=0.92$ ;  $RMSR=0.04$ ;  $RMSEA=0.06$ .

The internal consistency analysis of the sport motivation scale (SMS) was also satisfactory in its different dimensions: Intrinsic motivation to know,  $\alpha>0.75$ ; *intrinsic motivation to accomplish*,  $\alpha>0.83$ ; and on *intrinsic motivation to experience stimulation*,  $\alpha>0.70$ ; Identified Extrinsic motivation  $\alpha>0.65$ ; Introjected Extrinsic motivation,  $\alpha>0.73$ ; Extrinsic motivation of external regulation,  $\alpha>0.76$ ; Amotivation  $\alpha>0.79$ . Likewise, even though several factors showed a reliability or alpha value lower than the recommended 0.70<sup>48,49</sup>, due to the small number of items (four) composing the different factors, the observed internal validity can be marginally accepted<sup>50,51</sup>. The homogeneity analysis indicates that there are no overlaps between the two theoretical dimensions. The model put into practice predicts the existence of seven latent variables underlying the 28 items and accounting for the covariances observed between them. The Chi squared test was significant ( $\chi^2_{(153)}=396.47$ ;  $p=0.000$ ), with the original model showing an adequate goodness of fit index as the results were:  $\chi^2/gL=2.59$ ;  $GFI=0.94$ ;  $CFI=0.91$ ;  $RMSR=0.07$ ;  $RMSEA=0.05$ .

### Descriptive statistics and correlational analysis

Table 1 shows the descriptive analysis of each of the variables in the investigation. With respect to measures, in the perception of success, higher scores can be observed on task orientation than on ego orientation. Furthermore, within Sports motivation, the factors related to intrinsic motivation have higher scores, mainly on *intrinsic motivation to accomplish* and on *intrinsic motivation to experience stimulation*; the lowest values correspond to *amotivation*.

Concerning the correlation of the factors of the two scales (table 2), it should be pointed out that *ego orienta-*

**TABLE 1**  
MEAN (M), STANDARD DEVIATION (SD) AND ALPHA COEFFICIENTS ( $\alpha$ ) OF THE SUBSCALES OF PERCEPTION OF SUCCESS QUESTIONNAIRE (POSQ) AND THE SPORTS MOTIVATION SCALE (SMS)

Subscales of the questionnaires	M	SD	$\alpha$
Perception of Success			
I. Ego	59.21	7.39	0.90
II. Task	88.23	1.92	0.81
Sports Motivation			
III. Intrinsic motivation – knowledge	4.85	0.23	0.75
IV. Intrinsic motivation – accomplishment	5.36	0.32	0.83
V. Intrinsic motivation – experience stimulation	5.33	0.30	0.70
VI. Extrinsic motivation – identified	4.38	0.34	0.65
VII. Extrinsic motivation – introjected	5.03	0.24	0.73
VIII. Extrinsic motivation – external regulation	3.48	0.41	0.76
IX. Amotivation	2.25	0.37	0.79

**TABLE 2**  
CORRELATIONS BETWEEN THE SUBSCALES OF PERCEPTION OF SUCCESS QUESTIONNAIRE (POSQ) AND THE SPORTS MOTIVATION SCALE (SMS)

Subscales of the Questionnaires	POSQ					SMS			
	I	II	III	IV	V	VI	VII	VIII	IX
Perception of Success									
I. Ego	–	0.00	–0.06	–0.07	–0.06	–0.08	–0.07	0.14*	0.09
II. Task	–	–	–0.07	–0.03	–0.07	–0.02	0.04	–0.13*	–0.08
Sports Motivation									
III. Intrinsic motivation – knowledge	–	–	–	0.69**	0.58**	0.33**	0.27**	0.21**	–0.05
IV. Intrinsic motivation – accomplishment	–	–	–	–	0.66**	0.36**	0.34**	0.13*	–0.18**
V. Intrinsic motivation – stimulation	–	–	–	–	–	0.40**	0.33**	0.06	–0.13*
VI. Extrinsic motivation – identified	–	–	–	–	–	–	0.46**	0.44**	0.09
VII. Extrinsic motivation – introjected	–	–	–	–	–	–	–	0.36**	–0.02
VIII. Extrinsic motivation – external regulation	–	–	–	–	–	–	–	–	0.33**
IX. Amotivation	–	–	–	–	–	–	–	–	–

\*  $p < 0.05$ ; \*\* $p < 0.01$

tion is significantly and positively related to *extrinsic motivation of external regulation* ( $r=0.14$ ), whereas the *task* is related significantly but negatively, with the same factor of external regulation ( $r=-0.13$ ). However, it is important to point out that in both cases the correlation value ( $r$ ) is low. With respect to the relation between the subscales of SMS it should be pointed out the high correlation between the factors that refer to intrinsic motivation: the *intrinsic motivation to know* and the *intrinsic motivation to accomplish* ( $r=0.69$ ), as well as the *intrinsic motivation to accomplish* and the *intrinsic motivation to experience stimulation* ( $r=0.58$ ). On the other hand, *amotivation* is negatively and significantly related to *intrinsic motivation to achieve* ( $r=-0.18$ ) and to the *intrinsic motivation to experience stimulation* ( $r=-0.13$ ), even though in this case the level  $r$  is also low; whereas it shows a higher correlation both significantly and positively with *external regulation* ( $r=0.33$ ). Finally,

it is worth noting the absence of correlations between the different subscales (intrinsic motivation to know and amotivation; intrinsic motivation to experience stimulation and extrinsic motivation of external regulation; amotivation and introjected external motivation; amotivation and extrinsic motivation of external regulation).

### Gender differences

This was done taking into account Levene’s test of homogeneity of variance, given the fact that the samples are independent. Table 3 gathers the mean (M), standard deviation (SD) and the data of the T-Test for equality of means.

With respect to the POSQ, in the first factor (*Ego*), it should be highlighted that  $F=4.83$   $p=0.029$ , assuming that the variances are not equal:  $t(144,549)=4.67$   $p=0.000$ . Therefore, there is difference of means between

**TABLE 3**  
STUDENT'S T-TEST FOR INDEPENDENT SAMPLES, STATISTICS AND T-TEST FOR INDEPENDENT SAMPLES ACCORDING TO GENDER AND AGE

Subscales of the questionnaires	Gender						Age					
	Male		Female		T-test for the equality of means <sup>a</sup>		From 14 to 16 years old		From 17 to 18 years old		T-test for the equality of means <sup>a</sup>	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>
Perception of Success												
I. Ego	63.84	24.01	48.71	28.46	4.67	0.000	61.70	26.62	57.25	26.05	1.33	0.185
II. Task	87.40	12.76	90.11	9.34	-2.37	0.018	89.32	10.16	87.38	13.02	1.24	0.215
Sports Motivation												
III. Intrinsic motivation – knowledge	4.92	1.26	4.68	1.05	1.58	0.114	4.90	1.29	4.81	1.13	0.58	0.564
IV. Intrinsic motivation – accomplishment	5.37	1.23	5.33	1.21	0.23	0.820	5.35	1.23	5.36	1.22	-0.09	0.927
V. Intrinsic motivation – stimulation	5.43	1.13	5.52	1.08	-1.27	0.205	5.46	1.08	5.46	1.14	-0.97	0.332
VI. Extrinsic motivation – identified	4.47	1.15	4.20	1.34	1.60	0.111	4.33	1.27	4.42	1.18	-0.73	0.464
VII. Extrinsic motivation – introjected	5.04	1.27	5.01	1.34	-0.00	0.998	4.96	1.38	5.09	1.22	-0.87	0.386
VIII. Extrinsic motivation – external regulation	3.78	1.40	2.82	1.19	5.85	0.000	3.66	1.49	3.34	1.35	2.48	0.030
IX. Amotivation	2.40	1.50	1.93	1.30	2.66	0.008	2.19	1.37	2.30	1.51	-1.73	0.016

a The difference between means is significant to level  $p < .05$

male and female with respect to dispositional orientation towards ego, with the data a lot higher than the average among the male population. In the factor *Task*,  $F=3.04$   $p=0.082$ , assuming that the variances are equal:  $t(289)=-2.37$   $p=0.018$ . Consequently, there are also significant differences of means between male and female, being the latter the ones with the data a lot higher than the average.

In the SMS, within the extrinsic motivation subscale of external regulation,  $F=4.40$   $p=0.037$ , assuming that the variances are not equal:  $t(197,192)=5.85$   $p=0.000$ . There is, as a consequence, a difference of means between male and female. The same occurs with amotivation, as  $F=4.16$   $p=0.042$ , presupposing that the variances are not equal:  $t(198,612)=2.66$   $p=0.008$ . The remaining of the factors do not show significant differences, highlighting the equality amongst female and male athletes, or the scarce difference that they show in the intrinsic motivation subscale to accomplishments ( $p=0.820$ ) and, above all, the extrinsic motivation introjected ( $p=0.998$ ).

#### Age differences

As far as age is concerned, Levene's test only shows significant differences in the SMS: in the extrinsic motivation subscale of external regulation,  $F=4.16$   $p=0.142$ , assuming that the variances are equal:  $t(282)=2.48$   $p=0.030$ : there is difference of means between the younger

ones. They show higher than the average statistics and athletes from 17 to 18 years old, with the data below the average. The significant differences are more important in amotivation, as  $F=6.35$   $p=0.012$ , so it is assumed that the variances are not equal and:  $t(271,785)=-1.73$   $p=0.016$ . In this case, 14 to 16 years old athletes show data below the average while the data shown in athletes from 17 to 18 years old is significantly above the average (table 3).

#### Regression analysis

A regression analysis has been carried out in order to verify to what extent the different SMS subscales predict the *ego orientation* and the *task orientation*. It is important to point out that these results need to be treated with caution in the cases where the total percentage of the explained variance does not exceed 10%. As shown in table 4, in the population investigated throughout this research, only ego orientation due to behaviours based on extrinsic motivation of *external regulation* is predicted ( $F=3.60$ ;  $p=0.000$ ), explaining 12.5% of the variance. Likewise, a decrease towards the task is only predicted when extrinsic motivation of *external regulation* is predicted, ( $F=1.39$ ;  $p=0.018$ ). However, in this case a 7.9% of the overall variance is explained.

Furthermore, in order to verify the predictive value that gender and age variables have on the perception of success (POSQ) and the sports motivation (SMS), different linear regression analyses have been carried out (ta-

**TABLE 4**

MULTIPLE REGRESSION ANALYSIS CARRIED OUT BETWEEN THE SUBSCALES OF PERCEPTION OF SUCCESS AND THE SPORTS MOTIVATIONS. CORRELATIONS, STANDARDIZED BETA WEIGHTS ( $\beta$ ) AND EXPLAINED OVERALL VARIANCE ( $R^2$ ) FOR THE FACTORS OF SPORTS MOTIVATION AS PREDICTORS OF PERCEPTION OF SUCCESS

Variables	Ego				Task			
	F	$\beta$	p	R <sup>2</sup>	F	$\beta$	p	R <sup>2</sup>
Intrinsic motivation – knowledge	3.04	-0.10	0.479	0.125	1.39	-0.04	0.662	0.079
Intrinsic motivation – accomplishment		0.00	0.272			-0.00	0.986	
Intrinsic motivation – stimulation		0.01	0.988			-0.09	0.302	
Extrinsic motivation – identified		-0.15	0.065			0.09	0.225	
Extrinsic motivation – introjected		-0.10	0.173			0.09	0.221	
Extrinsic motivation – external regulation		0.27	0.000			-0.18	0.018	
Amotivation		0.03	0.599			-0.03	0.628	

**TABLE 5**

CORRELATIONS, STANDARDIZED BETA WEIGHTS ( $\beta$ ) AND EXPLAINED OVERALL VARIANCE ( $R^2$ ) FOR EACH FACTOR, FOR GENDER AND AGE AS PREDICTORS OF PERCEPTION OF SUCCESS AND SPORTS MOTIVATION

Variables	Gender				Age			
	F	$\beta$	R <sup>2</sup>	p	F	$\beta$	R <sup>2</sup>	p
Perception of Success								
I. Ego	25.05	-0.61	0.080	0.000	1.76	-0.16	0.006	0.185
II. Task	5.61	0.30	0.019	0.018	1.55	-0.15	0.005	0.215
Sports Motivation								
III. Intrinsic motivation – knowledge	2.51	-0.20	0.010	0.114	4.19	-0.17	0.001	0.016
IV. Intrinsic motivation – accomplishment	0.05	-0.03	0.000	0.820	1.37	0.09	0.000	0.242
V. Intrinsic motivation – stimulation	1.62	0.16	0.006	0.205	1.05	0.07	0.003	0.372
VI. Extrinsic motivation – identified	2.56	-0.21	0.009	0.111	3.18	0.12	0.002	0.046
VII. Extrinsic motivation – introjected	0.00	0.00	0.000	0.998	3.85	0.13	0.003	0.010
VIII. Extrinsic motivation – external regulation	30.06	-0.67	0.096	0.000	9.90	-0.22	0.015	0.000
IX. Amotivation	6.32	-0.32	0.022	0.012	10.87	0.21	0.019	0.001

Note. Separate analyses were carried out for each factor.

ble 5). Gender predicts in a significant way the orientation of perception of success, being stronger in relation to *ego* orientation, as it can be seen in the value of  $F=25.05$  and in the explained variance (8%) ( $p=0.000$ ). Similarly, gender also predicts in a significant and important way ( $p=0.000$ ) a behaviour of extrinsic motivation towards external regulation, accounting for 9.6% of the variance. The same happens with *amotivation* even though the predicted relation is not as strong ( $p=0.012$ ). Concerning age, it should be noted that it has appeared as a significant prediction in five SMS subscales. Within these five subscales, it is worth mentioning *external regulation* ( $p=0.000$ ), decreasing with age ( $\beta=-0.22$ ); and *amotivation*, increasing with age ( $\beta=0.21$ ). Nevertheless, the relation is not very strong since they only explain 1.5% and 1.9% of the variance respectively.

## Discussion

The first objective proposed in this investigation was to analyse the relations existing between the Achieve-

ment Goal Theory and the Self-determination Theory. Our results show higher values in the task factor than in the ego factor. They also show factors related to intrinsic motivation, above all in intrinsic motivation to accomplish and to experience stimulation with the lowest values corresponding to amotivation.

The above mentioned ratify the statement that both motivational orientations are orthogonal between them<sup>10</sup>. It should be highlighted that individuals with motivational disposition oriented towards the task or mastery judge their level of ability by means of a process of comparison with themselves using an auto-referential perception of ability<sup>6,10</sup>. Moreover, if there is also intrinsic motivation, athletes will enjoy more and show more interest in the sports practice<sup>52,53</sup>. At the same time, a positive conduct of permanence as well as adaptive and affective motivational patterns is promoted<sup>54</sup>.

Task-oriented athletes tend to have a higher motivation than ego-oriented ones<sup>55</sup>. These athletes tend to put more effort than the rest of the athletes, they are more

persistent, they enjoy more and they achieve a higher level of satisfaction by means of sports practice. On the contrary, the main objective of ego-oriented athletes is to pursue a social status and popularity<sup>11</sup>. They even abandon the practice of sport if they have a negative auto-perception of their competence, come across with difficulties in the activity<sup>56,57</sup> or even if the sport results do not correspond to the expectations and fail<sup>12</sup>. This is because they use external comparison as their main source of information<sup>10,58</sup>.

In line with the investigations carried out by Cervelló and Santos-Rosa<sup>57</sup>, Hanrahan and Cerin<sup>59</sup> and Sánchez et al.<sup>60</sup>, team athletes had high levels of task orientation. Some of these investigations showed that the levels of task orientation were higher in team athletes than in athletes practicing individual sports. Other interesting data were the ones given by Gábor et al.<sup>61</sup>. They show that there is not a statistical difference concerning extrinsic motivation between the players of different team sports (Ice hockey, Water polo, Volleyball and Football). For instance, Duda and White<sup>62</sup> stated that high performance athletes tend to display high orientations towards both task and ego. This is due to the fact that, even though they regard victory as a very important and pleasant aspect, they believe that the roots behind it are found in the hard and regular workout, in trainings and competitions and in the permanent personal improvement.

King and Williams<sup>63</sup> carried out a study with martial arts practitioners and demonstrated that performance was related to task orientation and not to ego orientation. Hodge and Petlichkoff<sup>64</sup> confirmed that the high levels of ability perceived in rugby players is associated with a high level of ego orientation when it is linked to high or moderated levels of task orientation. These findings, together with the ones by Wang and Biddle<sup>65</sup> suggest that ego-orientation is not always detrimental since this type of motivation combined with a high level of task orientation is associated with high levels of motivation.

The results show that ego-orientation is positively related with extrinsic motivation of external regulation, whereas task-orientation is negatively related with the same type of extrinsic motivation. These results coincide with the ones found by White and Duda<sup>24</sup>, who stated that ego orientation is positively related with the extrinsic reasons for practicing sport. Duda et al.<sup>22</sup> highlight that task orientation facilitates intrinsic motivation while ego orientation possibly decreases it.

Furthermore, White et al.<sup>66</sup> and Ryan and Deci<sup>9</sup> state that youngsters who are task oriented towards the practice of sport are more intrinsically motivated, enjoy more and experiment success more often than those who are ego oriented. These findings are in accordance with the ones provided by Álvarez et al.<sup>67</sup>, since that the players with high levels of self-determined motivation, enjoy more and get less bored with the practice of sport. Besides, Frederick and Ryan<sup>68</sup>, assert that athletes with a high level of self-determination and intrinsic motivation

have better positive mental features (low level of anxiety and depression, more vitality and more self-esteem).

Moreno et al.<sup>40</sup> reveal that the self-determined profile demonstrates a positive association with females who practice individual sports and who train more than three days per week. On the contrary the non self-determined profile is associated with males and athletes who practice team sports and who train from two to three days per week.

The results obtained in our study demonstrate a low positive correlation between ego orientation and amotivation. The latter also shows a positive and significant correlation with respect to extrinsic motivation of external regulation whereas the correlation between dispositional orientation towards task and amotivation is negative. Amotivation shows a negative and significant correlation with respect to intrinsic motivation (to accomplish and to experience stimulation).

The contribution by Vallerand and Losier<sup>21</sup> needs to be pointed out. According to them, it is more likely that athletes with a high extrinsic motivation abandon the sport practice at an earlier stage. On the contrary, Kim and Gill<sup>23</sup>, found out that both types of motivational orientations were positively related with intrinsic motivation.

Taking into account all the above mentioned and considering sport as an important context for children where they carry out process of social comparison with their equals, we should try to promote the development of task orientation within athletes from a very early age as in adolescence, once the personality of the athlete is established, it will become more difficult. This will help participation both becoming an appealing and positive experience and avoiding de-motivation and early drop outs, thus extending the implication of adolescents in sports activities.

The second objective that we proposed was to analyse the existing motivational differences according to socio-demographical variables, gender and age. With respect to the first of the variables, the findings show that there are significant differences between the male and female population in the different dispositional orientations (ego and task). The male population has the highest values in the dispositional orientation to ego. The female population, on the contrary, stands out in task orientation. These results coincide with the ones found in other investigations where the same scale has been used<sup>69–71</sup> and in others where the scale used has been the Task and Ego Orientation in Sport Questionnaire (*TEOSQ*<sup>56,59,72</sup>).

The analysis of the SMS scale suggests that there are only significant differences with respect to gender in extrinsic motivation of external regulation and in amotivation with values much higher than the average in the male population, whereas in the female population the values are below the average. These are similar results to the ones found by Fortier et al.<sup>73</sup>, in which female athletes showed less external regulation and amotivation than men. Even though we have not found throughout our re-

search other significant differences with respect to gender and intrinsic motivation, other studies pointed out that female athletes were more intrinsically motivated than male ones<sup>19,20,22,74,75</sup>.

Concerning age, we have only found statistically significant results in extrinsic motivation of external regulation, with older players showing the highest values and younger players the lowest ones. Statistically significant results have also been found in amotivation with older players showing the highest values.

Besides, the results also demonstrate that out of the two analysed socio-demographical variables, gender predicts in a significant way the orientation of the perception of sports success, being stronger in relation to ego orientation.

Likewise, it also predicts in a significant way the extrinsic motivation of external regulation as well as amotivation but to a lesser degree. Hanrahan and Cerin<sup>59</sup> affirm that gender is a predictor of the achievement goal orientations and a moderator of the relation existing between the level of participation and the attributional style. Moreover, they also state that the type of sport is a predictor of both the achievement goal orientations and the attributional style and a moderator of the relation between the level of participation and the attributional style.

As far as age is concerned and according to our results, we can confirm that is a significant predictor mainly in extrinsic motivation of external regulation and in amotivation, decreasing the former with age. The latter, on the contrary, increases with age.

Finally, we have also shown that extrinsic motivation of external regulation predicts in a positive way the ego orientation and a decrease of task orientation. Other results such as the ones found by Brière et al.<sup>35</sup>, clarify that the most self-regulated types of motivation, namely intrinsic motivation and/or identified regulation, act as positive predictors of the enjoyment of the sports practice while amotivation gives way to sports dropout<sup>76</sup>.

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## Conclusions

Throughout this investigation, we have presented the relations that exist between the Achievement goal theory and the Self-determination theory with a sample of adolescent basketball players. We have also analysed the differences that exist according to the socio-demographical variables gender and age. The results ratify the use of the Spanish version of the SMS to measure different types of motivation within the sports context. Likewise, it has been demonstrated that amotivation is more related with dispositional orientation to ego than to task and that there is a positive relation between ego orientation, extrinsic motivation and amotivation with significant differences according to the gender and age of the participants.

In addition, we have found out that mainly gender and also age are strong predictors of ego orientation, extrinsic motivation of external regulation and amotivation. We can also confirm that extrinsic motivation of external regulation positively predicts ego orientation and a decrease of task orientation.

Finally, it should be stressed out that in this study there are some limitations; on the one hand the limitations that any other correlational study has and, on the other hand, concerning the size of the sample, putting a limit to the generalization of the results. That is why, the results of this study should be regarded as preliminary and need to be replicated.

In the future, it should be of particular interest to use a wider sample and to improve the research with the measurement of the perceptions of motivational climate both within the coaches of the different teams and within the players. In order to carry this out, we would use as instrument the PMCSQ-2<sup>77</sup>, analyzing how these climates have an influence on sports motivation.

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## ANALIZA SAMOSVJESNIH MOTIVACIJA KOŠARKAŠA

### SAŽETAK

Cilj je ovog istraživanja dvojak. Prvi je ispitati odnose između različitih konstrukta koje definiraju Nichollsova teorija postizanja ciljeva te Decijeva i Ryanova teorija samoodređenosti. Drugi je analizirati razlike koje postoje između njih s obzirom na socio-demografske varijable spola i dobi. Korišten je uzorak od 292 košarkaša iz regije Murcia (Španjolska), u dobi između 14 i 18 godina. Osim toga, primjereni su Kastiljanska verzija Upitnik za percepciju uspjeha (POSQ) te Ljestvica sportske motivacije (SMS). Primijenjene su tri statističke analize, deskriptivna, korelacijska i regresijska analiza. Rezultati su pokazali pozitivan odnos ego orijentacije, ekstrinzične motivacije i amotivacije. Raspravljaju se motivacijski odnosi između obje teorije te razlike s obzirom na spol i dob. Utvrđeno je da su uglavnom spolne i dobne razlike jaki prediktori ego orijentacije, ekstrinzične motivacije vanjske regulacije i amotivacije. Također smo ustvrdili da ekstrinzična motivacija vanjske regulacije pozitivno predviđa ego orijentaciju te smanjenje orijentacije na zadatak. Rezultati ratificiraju korištenje španjolske verzije SMS upitnika za mjerenje različitih vrsta motivacije u sportskom kontekstu.