

Original article. The relationship between coaches' leadership type in fixed seat rowing, the number of regattas rowed and athletes' satisfaction.. Vol. IV, Issue. 3; p. 462-479, september 2018.  
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## **The relationship between coaches' leadership type in fixed seat rowing, the number of regattas rowed and athletes' satisfaction.**

### **La relación entre el tipo de liderazgo de los entrenadores de remo de banco fijo, el número de regatas remadas y la satisfacción de sus deportistas**

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#### **Abstract**

Traineras rowing is a type of rowing where the boats compete in the open sea. This study aims to examine the relationship between the coach's leadership in fixed seat rowing and the athletes' satisfaction, to which rower participation is added as a covariable. Four teams with a total 66 elite rowers (age:  $28.0 \pm 5.5$  years) and their four coxswains (age:  $36.1 \pm 1.1$  years) took part in this study. Two versions (preferences and perceptions) of the Leadership Scale for Sports-LSS which had been adapted to Spanish were used to evaluate the coxswains' leadership and its relationship with the rowers' satisfaction. The Spanish translation of the Athletic Satisfaction Questionnaire-ASQ was also used. In addition to leadership, which showed statistically significant relationships with the satisfaction factors taken as a whole ( $p > .001$ ), and with numerous dimensions of the scale, the number of regattas also showed statistical associations with the athletes' general satisfaction ( $p = .018$ ). The data obtained confirm the congruence hypothesis posed in the Multidimensional Model of Leadership (MML) and, in view of the differences in leadership found, the need for future interventions to improve coxswains in this sport.

#### **Key words**

Leadership; fixed seat; coach; satisfaction; rowing

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## Resumen

Las regatas de traineras son una modalidad deportiva que se desarrolla en mar abierto. El objetivo de este estudio fue examinar la relación existente entre el liderazgo de los entrenadores en remo de banco fijo y la satisfacción de los deportistas, a lo que se añade la participación de los remeros como covariable. Cuatro equipos con un total de 66 remeros de élite (edad:  $28.0 \pm 5.5$  años) y sus cuatro entrenadores (edad:  $36.1 \pm 1.1$  años) tomaron parte en este estudio. Para valorar el liderazgo ejercido por los entrenadores y su relación con la satisfacción de los deportistas, la adaptación al castellano de la Escala de Liderazgo en el Deporte (Leadership Scale for Sports-LSS) fue utilizada en dos de sus versiones (preferencias y percepciones) y la traducción al castellano de la Escala de Satisfacción de los Deportistas (Athletic Satisfaction Questionnaire-ASQ). Además del liderazgo, que obtuvo relaciones estadísticamente significativas con los factores de satisfacción tomadas en su conjunto ( $p > .001$ ), y con numerosas dimensiones de la escala, el número de regatas también mostró asociaciones estadísticas con la satisfacción general de los remeros ( $p = .018$ ). Los datos obtenidos confirman la hipótesis de la congruencia planteada en el Multidimensional Model of Leadership (MML) y dada las diferencias de liderazgo halladas surge la necesidad de futuras intervenciones de mejora de los entrenadores en esta especialidad deportiva.

## Palabras Clave

Liderazgo; banco fijo; entrenador; satisfacción; remo.

## Introduction

*Trainera* regattas developed in the late 20<sup>th</sup> century and, like other traditional Basque sports, were based on working activities at the time such as fishing. In the case of this team sport, comprising 13 rowers and one skipper, the main aim is to row the three nautical miles of a regatta course in the shortest possible time. Few published studies attempt to analyse rowers' performance, and those that exist tend to focus on physical and physiological factors (Izquierdo-Gabarren, Expósito de Villarreal and Izquierdo, 2010; Urdampilleta and León, 2012). In contrast, there are no publications related to the physiological aspects involved in fixed bench rowing, nor are there works that attempt to improve trainers' conduct.

The trainers are the ones in charge of their team (Zurita et al., 2016), while at the same time having a major impact on their quality and efficiency (Hill and Sotiriadou, 2016). Their leadership is a fundamental aspect in sports performance, especially in team sports, and is also an important variable that directly affects the environment of any training programme, being at the same time linked to consequences such as athletes' performance and satisfaction (Chelladurai, 2014). For this reason, the trainer will often be analysed with a view to improving the performance of their sportsmen/women of which they are in charge (Allan, Vierimaa, Gainforth and Côté, 2017). If we take into account the fact that a successful leader in a specific sport does not necessarily need to be good at running other sports organisations (Smoll and Smith, 2009), we therefore consider it necessary to analyse the trainer's leadership in each sport in which one wishes to maximise sports performance.

In view of the importance given to the effects of leadership exercised by the trainer in addition to their relationship with sports performance (Fenoy-Castilla and Campoy-Ramos, 2012), sportsmen's own satisfaction has been the focus of interest in recent years (Aytaç, 2017; Duarte, Teques and Silva, 2017; Ignacio III, Montecalbo-Ignacio and Cardenas, 2017; Mugala-Bulinda and Wamukoya-Edwin, 2017).

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To be able to find publications that analyse the conduct of rowing leaders, we need to turn to work carried out in different countries on the subject of fixed bench or Olympic rowing (Côté and Sedgwick, 2003; Giddings, 2009; Kiosoglous, 2013; Lin, 2005), while the same occurs when seeking the trainer's influence on rowers' satisfaction (Lin, 2005).

However, increasingly and given the complexity and importance of the process, professional trainers tend to be involved in improvement programmes in order to try and get the best out of their sportsmen (Allan, Vierimaa, Gainforth and Côté, 2017; Tobar, 2018), whereby it will initially prove essential to analyse trainers' conduct. Thus, the purpose of this study is to analyse the leadership exercised by trainers from different rowing teams and the relationship existing between trainers' conduct, the percentage number of regattas rowed and sportsmen's satisfaction.

## Methodology

### Design

This research was designed as an *ex post facto* retrospective single group study (León and Montero, 2007). As a dependent variable, satisfaction is considered to be a multi-dimensional construct, while the type of leadership exercised by the trainer is considered to be an independent variable (adjusted leadership, partially adjusted leadership and non-adjusted leadership). The percentage number of regattas rowed was taken into consideration as a co-variable.

### Subjects

This may be considered a convenience sample and the sampling undertaken was non-probabilistic and accidental in nature: 66 sportsmen in total (62 rowers and 4 skippers) of ages ranging from 18 to 43 years ( $28.0 \pm 5.5$  years), with their 4 trainers ranging from 35 to 37 ( $36.1 \pm 1.1$  years). All subjects were male – the elite from this sport – from four towns within the same province and competitors in the main *trainera* league in which 12 teams take part,

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representing 33% of the teams in the league (Liga San Miguel, *trainera* regatta first division).

#### Instruments used

The translation into Spanish, validation, adaptation and review by Sánchez-Bañuelos (1996) of the “Leadership Scale for Sport” (LSS) developed by Chelladurai and Saleh (1980) in its three versions (preferences-LSS1, perceptions-LSS2 and trainers' self-perceptions-LSSE) was used to assess trainers' conduct. This instrument was created to measure trainers' conduct based on the “Multidimensional Model of Leadership” MML (Chelladurai, 2014), and has been used to measure leadership in different countries – it is one of the most frequently-used instruments in this field and is expected to remain so (Pastore, 2014). A recent study carried out by Fletcher and Roberts (2013) analysed the longitudinal stability of the LSS scale, lending support to its use in trainer-related research, and we have recently found adaptations of the scale within the Spanish context – in this case, football (Ruiz and De la Vega, 2015).

The Spanish version of the LSS (Sánchez-Bañuelos, 1996) comprises 26 equal items for the three versions, in which the only thing that changes is the initial statement: “*As a trainer, I ...*” (LSSE); “*I personally prefer my trainer to ...*” (LSS1), “*I personally consider my current trainer to ...*” (LSS2). Likert Scale from 1 to 5 (1 being never and 5 being always). In turn, the items from each questionnaire are grouped together into 6 factors referring to trainer conduct: *Permeability in terms of Opinion* of sportsmen (PO);  $\alpha_{\text{Preferencia}} \cdot 68$ ,  $\alpha_{\text{Percepción}} \cdot 83$  (e.g.. “I ask sportsmen their opinion about the strategy pursued in specific competitions”), *Instruction and Management of the group* (IMG);  $\alpha_{\text{Preferencia}} \cdot 68$ ,  $\alpha_{\text{Percepción}} \cdot 87$  (e.g.: “I make sure sportsmen work to their full capacity”), *Individual Attention* (IA);  $\alpha_{\text{Preferencia}} \cdot 74$ ,  $\alpha_{\text{Percepción}} \cdot 84$  (e.g.: “I pay special attention to correcting sportsmen's mistakes”), *Social Support* (SS);  $\alpha_{\text{Preferencia}} \cdot 35$ ,  $\alpha_{\text{Percepción}} \cdot 77$  (e.g.: “I help sportsmen with their personal problems”), *Margin for Initiative* regarding sportsmen (MIS);  $\alpha_{\text{Preferencia}} \cdot 53$ ,  $\alpha_{\text{Percepción}} \cdot 63$  (e.g.: “I let sportsmen set out their

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own objectives”) and *Management and Forecast* (MF);  $\alpha_{\text{Preferencia}}.46$ ,  $\alpha_{\text{Percepción}}.59$  (e.g.: “I make sure sportsmen are rewarded for their good results”).

The adapted version of the *Athletic Satisfaction Questionnaire - ASQ* (Riemer and Chelladurai, 1998) that is translated into Spanish and available on the Teskal web platform (Arruza, 2007) was used to test rowers' satisfaction. This scale comprises 42 items that are grouped together into 11 dimensions and which in turn form four satisfaction group dimensions. Satisfaction with performance was tested in *Personal Performance* (PP);  $\alpha.85$  (e.g.: “the level I attained in terms of my objectives over the season”) and *Team Performance* (TP);  $\alpha.83$  (e.g.: “the number of competitions won and lost over the season in the *trainera* league”). Satisfaction related to the trainer's conduct is tested by the *Use of Capacity* (UC);  $\alpha.77$  (e.g.: “the extent to which I use my capacities”), *Decision-making, strategy* (DMS);  $\alpha.87$  (e.g.: “the choice made by the trainer about which rowers to use for the competition”), *Personal Treatment* (PT);  $\alpha.92$  (e.g.: “the recognition I receive from my trainer”), and *Training and Instruction* (TI);  $\alpha.82$  (e.g.: “the training I received over previous seasons”). Those related to group aspects comprise *the Group's Contribution to the Task* (GCT);  $\alpha.82$  (e.g.: “the extent to which my colleagues provide me with instructions”), *Social Contribution of the Group* (SCG);  $\alpha.83$  (e.g.: “my social status in the team”), *Ethical Functioning* (EF);  $\alpha.74$  (e.g.: “the extent to which members of my group are ethical”), *Integration of the Team* (INT);  $\alpha.82$  (e.g.: “the way in which the team works in order to improve”) and lastly, satisfaction related to *Personal Dedication* (PD);  $\alpha.80$  (e.g.: “the extent to which I do the best I can for the team”).

## Procedure

A study was initially submitted before the *Trainera* Club Associations league management (Liga San Miguel) following which the rowing clubs analysed were contacted, at the same time obtaining the informed consent of those trainers and rowers participating in the

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study. The procedures used also adhere to the ethical criteria set out by the Helsinki Declaration (1975).

Data was gathered during the final part of the league and within the same week, and the same procedure was followed at the four clubs, where the rowers subject to study were informed at an initial meeting, when they were also explained how to complete the questionnaires. Following the talk, the trainer was then asked to leave the room so as to address any possible doubts among rowers with regard to the items on the questionnaires. Confidentiality of results was also guaranteed before participants started responding to the questionnaires.

### Statistical Analyses

Descriptive analyses and Pearson's bivariate correlation analyses were calculated in order to measure the level of association between rowers' leadership preferences and the dimensions corresponding to their perceptions, and a reliability analysis was also conducted of the variables measured by the questionnaires using Cronbach's alpha.

A comparison was made as shown below of mean values for independent samples using the "student's parametric t-test", while a multivariate covariance test (MANCOVA) was carried out in order to conclude and establish associations between the number of regattas (taken as a co-variable) and the type of leadership (taken as an independent variable). The p-value was calculated to assess result in addition to the size of the effect obtained ( $\eta^2$ ).

Variable normality was ascertained using the Kolmogorov-Smirnov test for a sample – most of the variables produced an insignificant value. Those that did not do so evidenced ranges of asymmetry and kurtosis within -2 and +2, whereby they may be considered normal variables when using a mild normality criterion (Pérez-López, 2004). Likewise and before conducting the MANCOVA, variance homogeneity between the groups was ascertained using

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Levene's test which described variance homogeneity for the variables involved. Additionally, Box's M test was also contrasted to ascertain the homogeneity of covariance, producing insignificant values. SPSS 22.0 statistical software was used for data treatment.

## Results

According to the descriptive analyses and as can be seen in Figure 1, the demands or preferences of sportsmen about their trainer evidence the highest values in each team. Generally speaking, it can be seen that neither sportsmen's perceptions about their trainers nor trainers' self-perceptions about their own conduct attain the level of conduct demanded by sportsmen.

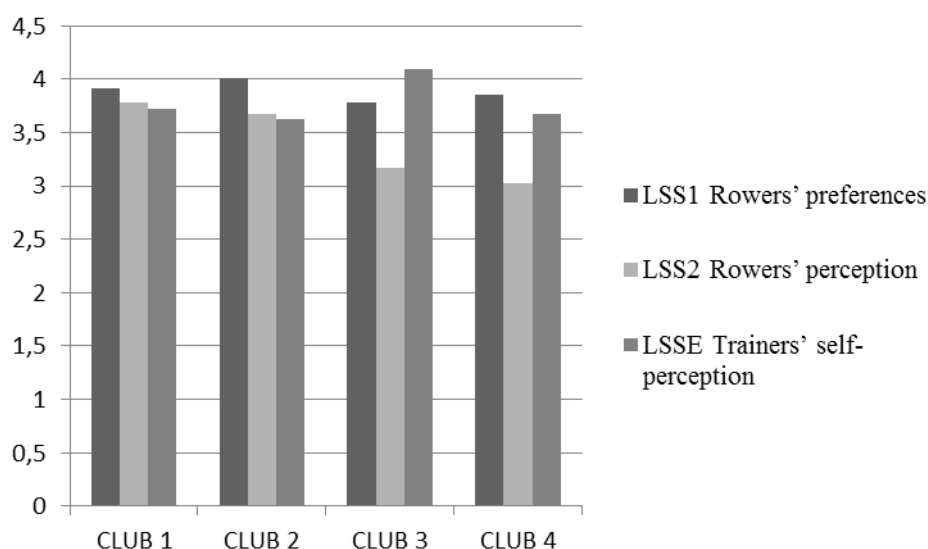


Figure 1: Trainers' leadership at each of the clubs analysed from three perspectives. Source: put together by the author s



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According to Figure 1, we can see how sportsmen's perceptions about their trainer are close to trainers' self-perceptions at clubs 1 and 2, and differ in the case of clubs 3 and 4, where the trainer perceives themselves to have more suitable conduct than what rowers think.

Table 1: Statistical differences between preference dimensions and sportsmen's perceptions about their trainers at each club.

		Preference		Perception		t(gl)	P
		X	DT	X	DT		
Club1 (n=19)	PO	3.72	0.52	3.55	0.57	1.413(18)	.174
	IMG	4.53	0.32	4.28	0.56	2.035 (18)	.057
	IA	4.53	0.48	4.13	0.59	1.452(18)	.164
	SS	3.94	0.40	3.92	0.51	0.169(18)	.867
	MIS	2.59	0.68	2.56	0.66	0.172(18)	.865
	MF	4.33	0.50	4.24	0.39	0.652(18)	.523
Club2 (n=15)	PO	3.77	0.55	3.61	0.68	1.282 (14)	.221
	IMG	4.52	0.43	3.96	0.55	3.580(14)	.003
	IA	4.50	0.49	4.05	0.72	2.201(14)	.045
	SS	4.08	0.51	3.75	0.59	1.936(14)	.073
	MIS	2.80	0.53	2.62	0.53	2.477(14)	.027
	MF	4.40	0.55	4.04	0.65	2.256(14)	.041
Club3 (n=16)	PO	3.46	0.47	2.86	0.81	2.799(15)	.013
	IMG	4.53	0.52	3.47	0.79	5.505(15)	.000
	IA	4.17	0.66	3.37	1.04	2.708(15)	.016
	SS	3.79	0.79	3.00	1.11	3.112(15)	.007
	MIS	2.62	0.92	2.43	0.94	0.962(15)	.351
	MF	4.12	0.71	3.87	0.71	1.307(15)	.211
Club 4 (n=16)	PO	3.76	0.35	3.04	0.57	4.941(15)	.000
	IMG	4.33	0.58	3.07	0.67	5.957(15)	.000
	IA	4.21	0.54	3.07	0.46	6.741(15)	.000
	SS	3.95	0.56	2.95	0.69	4.315(15)	.001
	MIS	2.68	0.57	3.00	0.82	-1.575(15)	.136
	MF	4.12	0.45	3.00	0.62	6.088(15)	.000

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PO: *Permeability in terms of Opinion of sportsmen*; IMG: *Instruction and Management of the group*; IA: *Individual Attention*; SS: *Social Support*; MIS: *Margin for Initiative* regarding sportsmen; MF: *Management and Forecast*.

Table 1 shows the comparison between preferences and perceptions of the dimensions contained in the leadership questionnaire according to each club. It can be ascertained that there are no apparent differences at club 1 between what they prefer and what they perceive, At club 2 we find significant statistical averages in the case of the IMG dimension ( $t_{15}=3.580$ ;  $p=.003$ ), in the IA dimension ( $t_{15}=2.201$ ;  $p=.045$ ), in MIS ( $t_{15}=2.477$ ;  $p=.027$ ) and in MF ( $t_{15}=2.256$ ;  $p=.041$ ). At club 3 statistical differences are found in the PO dimension ( $t_{16}=2.799$ ;  $p=.013$ ), in the IMG dimension ( $t_{16}=5.505$ ;  $p=.000$ ), in IA ( $t_{16}=2.708$ ;  $p=.016$ ) and in SS ( $t_{16}=3.112$ ;  $p=.007$ ). At club 4 we find significantly statistical differences in all dimensions except in the case of MIS ( $t_{16}=-1.575$ ;  $p=.136$ ), evidencing the following values in the case of the PO dimension ( $t_{16}=4.941$ ;  $p=.000$ ), in IMG ( $t_{16}=5.957$ ;  $p=.000$ ), in IA ( $t_{16}=6.741$ ;  $p=.000$ ), in SS ( $t_{16}=4.315$ ;  $p=.001$ ) and in MF ( $t_{16}=6.088$ ;  $p=.000$ ).

#### Pre-data analysis

Levene's test was carried out to ascertain error variance homogeneity between the groups, and the existence of such variance homogeneity was confirmed in all dimensions involved in the analysis.

Table 2: MANCOVA multivariate contrasts

Effect	Variable	Wilks' Lambda	F	Gl hypothesis	gl error	Sig	$\eta^2$
Co-variable	No. regattas	.644	2,41	11	48	.018	.356
VI	Type lead	.354	2.975	22	96	>.001	.405

Likewise and can be seen in Table 2, a Covariance Multivariate Analysis (MANCOVA) was conducted by taking the dimensions attached to subjects' satisfaction as

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dependent variables (PP, TP, UC, DMS, PT, TI, GCT,SCG, EF, INT, PD). The type of leadership defined in three categories (adjusted leadership, partially adjusted leadership and non-adjusted leadership) was taken as an independent variable, and the number of regattas rowed was introduced as a co-variable as it was thought that this might have an influence on perceived satisfaction. The co-variable evidenced a moderate and significant association with the dependent variables taken as a whole (Wilks' Lambda =.644;  $F_{11,48}=2,410$ ;  $\eta^2=.356$ ;  $p=.018$ ), whereas the type of leadership independent variable showed a major and significant effect with the dependent variables taken as a whole (Wilks' Lambda =.354;  $F_{22,96}=2,975$ ;  $\eta^2=.405$ ;  $p=>.001$ ).

In terms of univariate analyses, mention should be made of the fact that the type of leadership showed a mild and significant association with PP ( $F_2=5,192$ ;  $\eta^2=.152$ ;  $p=.008$ ), with TP ( $F_2=5,910$ ;  $\eta^2=.162$ ;  $p=.005$ ), with UC ( $F_2=3,379$ ;  $\eta^2=.104$ ;  $p=.041$ ), with SCD ( $F_2=6,119$ ;  $\eta^2=.174$ ;  $p=.004$ ), with EF ( $F_2=4,441$ ;  $\eta^2=.133$ ;  $p=.016$ ) and with INT ( $F_2=7,144$ ;  $\eta^2=.198$ ;  $p=.002$ ), whereas it showed a moderate and significant association with DMS ( $F_2=13,210$ ;  $\eta^2=.313$ ;  $p=>.001$ ), with PT ( $F_2=17,280$ ;  $\eta^2=.373$ ;  $p=>.001$ ) and with IE ( $F_2=11,077$ ;  $\eta^2=.249$ ;  $p=>.001$ ).

For its part, the number of regattas rowed evidenced mild and significant associations with UC ( $F_2=11,612$ ;  $\eta^2=.167$ ;  $p=.001$ ), with PT ( $F_2=13,654$ ;  $\eta^2=.191$ ;  $p=>.001$ ) and with SCD ( $F_2=7,176$ ;  $\eta^2=.110$ ;  $p=.010$ ). Association with the other dimensions was deemed insignificant.

## Discussion

The main purpose of this research has been to study knowledge about rowing trainers' conduct in depth by analysing the relationship between this leadership and sportsmen's satisfaction. To this end we have used the hypothesis considered by the Leadership Multi-dimensional Model, in which one of the main hypotheses raised is that sportsmen's

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satisfaction is directly linked to their trainers' conduct (Chelladurai, 2014), with this hypothesis being confirmed in the research.

Within the context of Olympic rowing, attention should be drawn to the work undertaken by Côté and Sedgwick (2003) in Olympic rowing, given its structural familiarity with *trainera* rowing. These authors based themselves on rowers' and trainers' perceptions in order to identify effective leadership conduct among elite rowing trainers within the Canadian context. Of the items and dimensions from the LSS scale we have used and taking into account the characteristics demanded by rowers, we find clear similarities with the types of effective conduct that Côté and Sedgwick (2003) defined in moving bench rowing: to create a positive training environment and facilitating the pursuit of objectives effectively, teaching skills to rowers by recognising individual differences and establishing positive mutual understanding with each sportsmen, and the fact that the trainer makes proactive plans. With these results, it can be seen that the most-demanded conduct coincides in the case of both sports, with the leadership factors most sought after by *trainera* rowers being Instruction and Management of the group (IMG), Individual Attention (IA) and Management and Forecast (MF) on the part of the trainer. Conversely, the Margin for Initiative regarding Sportsmen (MIS) evidences lower values, with this type of conduct barely being required by rowers, and non-existent among the types of effective conduct defined in moving bench rowing (Côté and Sedgwick, 2003).

Furthermore, the co-variable *number of regattas rowed* shows a moderate and significant association with the general satisfaction perceived by sportsmen, which coincides with that found by Garland and Barry (1988) in their study with American football players, in which the time played or participated was analysed and statistically significant results obtained. Studying the results obtained still further, we can see that the number of regattas rowed correlates positively with the two satisfaction dimensions related to the trainer (UC, PT) and to a dimension related to the group (SCG).

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The independent variable shows a significantly relationship with the global satisfaction of their sportsmen – this result coinciding with recent research such as that by Aytac (2017); Duarte, Teques and Silva (2017) into football and those obtained by Ignacio III, Montecalbo-Ignacio and Cardenas (2017) in different new sports. All these works coincide in the fact that the leadership exercised by trainers evidences a statistical association with the satisfaction of their sportsmen. In terms of the studies undertaken on Olympic rowing, we find works carried out by Giddings (2009) and Lin (2005), who found statistically significant relationships between the leadership exercised by trainers and their rowers' satisfaction – results which are confirmed in this research.

By studying the results obtained in depth, we can see that the leadership exercised by trainers evidences statistical associations with most satisfaction dimensions: with dimensions referring to satisfaction with performance (PP and TP), with facets related to the trainer (UC, PT, TI, DMS) and with dimensions related to the group of which the sportsmen form a part (SCD, EF, INT), which demonstrates the importance of the leadership exercised by the trainer in different rowers' satisfaction dimensions. Hence the importance of attempting to adapt trainers' conduct to sportsmen's needs (Tobar, 2018), as by pursuing the hypothesis put forward by Chelladurai (2014) and their congruence theory, the leadership exercised by the trainer will be related to sportsmen's satisfaction and to the level of performance achieved by them. Despite such relevance, the techniques and theoretical structures offered by the chance to bring about effective changes in trainers' conduct do not tend to be consistently included in trainer improvement programmes (Allan, Vierimaa, Gainforth and Côté, 2017). However, recent interventions such as the one provided by Tobar (2018) in the case of a group sport such as roller hockey show that trainers' conduct may be modified and adapted to their sportsmen's demands.

## Conclusion

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The main conclusion we can draw from this research is the relationship existing between trainers' conduct and their rowers' satisfaction – both on a general level and in terms of most of the satisfaction dimensions analysed. Given this correlation, the importance of trying to improve the work carried out by trainers would seem evident, and this is a reason why numerous developmental programmes exist that attempt to change trainers' conduct in specific areas of activity (Lefebvre, Evans, Turnnidge, Gainforth and Côté, 2016). In this respect, Mc-Arthur (1997) highlights the importance of the fact that rowing trainers should be aware of their own conduct, whereby he proposes the need for a programme based on a feedback system that would help rowing trainers to modify their work and, in short, become better trainers. Along these lines, we understand that defining the reality facing trainers in their specialist area and their relationship with their rowers' satisfaction will help us to take possible programmes and improvement aspects of trainers into consideration.

### **Limitations**

The fact that data will only be gathered at the end of the season is thought to be a limitation, with it being considered that it might be interesting to view the evolution of trainers' conduct and sportsmen's satisfaction at different times. Likewise, a large sample of rowers would be advisable, as this would enable us to contrast the results obtained from this research and thus draw up a clearer map of the leadership demanded by rowers in this specialist area. On the other hand, it would also be interesting to undertake similar studies on girls, hence defining the leadership needs of female *trainera* trainers.

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