

# Self-control and aggressiveness as mediating factors between motivational orientations and sportspersonship

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## ABSTRACT

In light of the increasing propensity toward unsportsmanlike behaviours that have caused the failure of the notion of fair play, this research tested a causal model of theoretically-predicted antecedents of sportspersonship, in which the two trait-related personality factors, self-control and aggressiveness, mediated the relationship between motivational orientations and sportspersonship. After examining the five-factor structure of the Multidimensional Sportspersonship Orientation Scale in a first sample of Italian athletes ( $n = 371$ ,  $M_{age} = 26.57$ ), the resulting 20-item four-factor model proved to be satisfactory and reliable. In a second sample ( $n = 814$ ,  $M_{age} = 25.96$ ) the proposed empirically-based model confirmed the important role played by self-control in mediating the relationship between ego orientation, aggressiveness, and sportspersonship. In terms of practical implications, the findings provide a more comprehensive conceptualization of the factors that differentiate the inter- and intra-individual characteristics in sportspersonship, thus allowing practitioners to develop effective intervention programs addressed to athletes. **Keywords:** Task and Ego Orientations; Sportspersonship; Dispositional factors; MSOS.

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## INTRODUCTION

In recent years sport participation has been characterized by incidents of violence, ethical scandals, and unsportsmanlike behaviours, which have caused the failure of the notion of fair play conceived by Shields and Bredemeier (1995). The authors declared that sport participation should build character and promote courage, persistence, and self-control among athletes. Indeed, from the early 1990s sport psychologists have focused on the conceptualization of sportpersonship and on the causes of maladaptive sport behaviours. In the social-psychological perspective sportpersonship, conceived as respect for the game, opponents, and officials, is an interpersonal and multidimensional construct (Vallerand et al., 1996) operationalized in the Multidimensional Sportpersonship Orientation Scale (MSOS; Vallerand et al., 1997).

The sportpersonship construct has been psychometrically studied and analysed in interaction with dispositional aspects in terms of motivation and personality. As for motivation, past research linked the adaptive behaviour to the theories of self-determined motivation (Chantal and Bernache-Asollant, 2003; Monacis et al., 2013; Oliva et al., 2011), motivational climate (Gano-Overway et al., 2005; Miller et al., 2004), and motivational orientations and goal perspectives (Duda and Nicholls, 1992; Dunn and Dunn, 1999; Monacis et al., 2015, 2014; Ryska, 2003). Given that a substantial body of sport psychology literature has dealt with the last perspectives (e.g., Roberts and Treasure, 1995), referred to as Achievement Goal Theory (AGT; Nicholls, 1989), the current research assumed this conceptual framework according to which individuals achieve competence-based aims in evaluating settings, i.e., in sport. The demonstration of competence and, thus, perceptions of ability, are a central variable and define two orthogonal goal orientations as task and ego. Specifically, task orientation operates when athletes' actions are motivated by personal mastery and achievement of higher ability: success and failure depend from the athlete's self-referenced perceptions of his/her performance. Ego orientation operates when athletes' actions are motivated by normative competence, such as demonstrating higher ability or beating an opponent: success and failure are judged by comparing own performance with the performance of other competitors.

As the type of goal adopted by athletes is presumed to determine the perceptual set for how they interpret and experience achievement settings, achievement goals are viewed as important predictors of a host of relevant processes and outcomes, including socio-moral variables such as sportpersonship (Stornes and Ommundsen, 2004; Martín Espinosa et al., 2018). Indeed, the considerable research conducted on this topic revealed consistent associations between athletes' achievement goals and socio-moral functioning. Specifically, ego-oriented goals were generally associated with unsporting behaviours, whereas task orientation was primarily related to pro-social attitudes and behaviours (Bortoli et al., 2012; Lee et al., 2008; Monacis et al., 2015; Stornes and Ommundsen, 2004).

The sociocognitive approach of achievement motivation helped clarifying the issue of sport aggression (Stornes and Ommundsen, 2004), as well. The motivation-aggression relationship within this perspective was the focus of various studies (e.g., Biddle et al., 2003; Gill et al., 2017; Rasclé et al., 1998) which demonstrated the association of ego-goal orientation with a more significant perception of aggression legitimacy or with an exhibition of instrumental and/or hostile aggression.

Aggressiveness, in turn, was found to be negatively linked to pro-social attitudes and behaviours: athletes with higher levels of anger and aggressiveness were more prone to exhibit antisocial behaviour, such as cheating or trying to injure other players and opponents (Chantal et al., 2005; Kavussanu et al., 2013; Monacis et al., 2015).

A further dispositional factor that needs to be considered is self-control, which was generally associated with a variety of positive outcomes (Duckworth and Seligman, 2005; Finkel and Campbell, 2001; Tangney et al., 2004) and different responses, such as emotion regulation and thought suppression. Accordingly, when self-control is impaired, anti-social behaviours may increase (Mead et al., 2009).

The role played by self-control in the regulation of aggression has also been proved (DeWall et al., 2007; DeWall et al., 2011; Monacis et al., 2016). For example, Denson et al. (2011) showed that a two-week self-control training reduced individuals' aggressive responses: among participants with a high level of trait aggressiveness, those who attended the training reported less aggression than the participants of the control group. Sofia and Cruz (2015, 2016) indicated that trait self-control, considered as personality structure, had a central role in the regulation of aggression, since a large multivariate effect was found between athletes groups with high and low trait self-control capacity.

In light of the above described relationships, the present research sought to test a theoretical model of the antecedents of sportspersonship orientations by using a cross-sectional design. Specifically, as there is clear evidence that individual characteristics inevitably contribute to how athletes behave in competitive sport, the two personality-related factors of self-control and aggressiveness were assumed to mediate the effects of task and ego orientations on sportspersonship. A direct causal link between self-control and aggressiveness was also expected.

Before testing the mediation model, the factorial structure of the Multidimensional Sportspersonship Orientation Scale (MSOS) was examined since: 1. There is no Italian version of the MSOS, and 2. The scale was criticized for some psychometric problems and limitations. According to McCutcheon (1999), the MSOS was generally affected by social desirability bias, it did not distinguish athletes with high scores and athletes with low scores of sportspersonship, some items did not reflect signs of good or bad sportspersonship, and the dimension of the "commitment to athletic excellence" was better referred to performance rather than to sportspersonship. Shields and Bredemeier (1995) had already affirmed that the 21 items version (Vallerand and Losier, 1994) did not sufficiently embrace the prominent perspective of "winning at all costs", a crucial issue in the debate on the evaluation of socio-moral conducts among athletes. Stornes (2001) reported that the scale did not include the instrumental aggression, which was perceived by athletes in elite handball as an easily justifiable and accepted behaviour, especially in the form of intimidation. A new dimension, Instrumental Aggression, was then included by Stornes and Bru (2002) in the original MSOS to capture a significant behavioural aspect of socio-moral consequences in sport, thus creating a balance in the existing dimensions of the instrument. Despite this criticism, the original scale (Vallerand et al., 1997) was translated into different languages: Norwegian (Lemyre et al., 2002), Spanish (Martín-Albo et al., 2006), Greek (Pavlopoulou et al., 2003), Portuguese (Vissoci et al., 2008), and French (Chantal et al., 2009).

## METHODS

### *Participants*

A sample of 1185 participants was non-randomly recruited in regional sport clubs and then divided into two subsamples in order to reach the above-mentioned aims. 83% declared to compete in various types of sport, including volleyball, basketball, soccer, and martial arts. The athletes have engaged in sport for about 10.55 years (SD = 5.83) with an average of 8.56 hours (SD = 5.18) per week dedicated to training.

The first subsample, used to assess the factorial structure of the MSOS, comprised 371 athletes (257 men, 69.3%). The mean age was 26.57 years ( $SD = 9.07$ ;  $28.16 \pm 9.52$  and  $23.00 \pm 3.77$ , for males and females, respectively).

The participants of the second subsample, used to test the mediation model, were 814 athletes (565 males, 69.41%). The mean age was 25.96 years ( $SD = 8.48$ ;  $27.13 \pm 8.93$  and  $23.19 \pm 6.56$ , for males and females, respectively).

### **Measures**

The battery was composed of five sections. The socio-demographic section included gender, age, type of sports, number of training hours per week, years of sports experience, and if athletes competed in sport clubs or leagues.

The Multidimensional Sportpersonship Orientation Scale (MSOS; Vallerand et al., 1997) is a self-report measure composed of 25 items rated on a five-point Likert scale ranging from 1 (Never true) to 5 (Always true). The instrument assesses five dimensions: (1) Respect and concern for social conventions (e.g., "Win or lose, I shake hands with the opponent after the game"); (2) Respect and concern for the rules and officials (e.g., "I obey the referee"); (3) Commitment toward participation (e.g., "I don't give up even after making many mistakes"); (4) Concern for opponents (e.g., "I help the opponent get up after a fall"), and (5) Negative attitudes (e.g., "I compete for personal honours, trophies, and medals"). The psychometric properties are shown in the first paragraph of the Results section.

The Aggression Questionnaire-short form (AQ-SF; Bryant and Smith, 2001; Babore et al., 2017) is composed of 12 items taken from the Italian adaptation of the AQ-long form (Fossati et al., 2003). All items are rated on a five-point Likert scale ranging from 1 (Extremely uncharacteristic of me) to 5 (Extremely characteristic of me). The AQ-SF includes four components. The Physical and Verbal components refer to the behavioural dimensions of aggression (e.g., "Given enough provocation, I may hit another person"; "My friends say that I'm somewhat argumentative"); the Anger and Hostility components refer to the cognitive dimensions and measure, the former, the anger-related arousal and the sense of control (e.g., "I have trouble controlling my temper") and, the latter, the feelings of resentment, suspicion, and alienation, which increase the likelihood of anger responses (e.g., "At times I feel I have gotten a raw deal out of life"). Numerous studies have provided evidence that support the reliability and validity estimates of the AQ-SF (Abd-El-Fattah, 2013; Ang, 2007). In this study, reliability was Cronbach's  $\alpha = .90$  for the total score.

The Task- and Ego-Orientation in Sport Questionnaire (TEOSQ; Duda and Nicholls, 1989; Bortoli and Robazza, 2005) assesses individuals' tendency to judge their own competence in goals achievement. Task oriented individuals tend to be self-referenced, whereas ego-oriented individuals tend to compare themselves to others. The scale measures the two orthogonal orientations with seven task-orientated items (e.g., "When I do my very best") and six ego-orientated items (e.g., "When I play better than others") rated on a five-point Likert scale (1 = Totally disagree, 5 = Totally agree). In the present study, the Cronbach's  $\alpha$  coefficients were .85 for Task-orientation and .75 for Ego-orientation, in line with those reported in the literature.

The Brief Self-Control Scale (BSCS; Tangney et al., 2004) consists of 13 items designed to assess dispositional self-regulatory behaviours (e.g., "I have a hard time breaking bad habits" and "I do certain things that are bad for me, if they are fun"). Each item is rated on a five-point Likert scale (1 = Not like me at all, 5 = Very much like me). Evidence of stability and internal consistency of the BSCS were provided (de Ridder et al., 2012). In this study, reliability was Cronbach's  $\alpha = .83$  for the total score.

### **Procedure**

The sample was recruited through advertisements or flyers in gyms and regional sports clubs. Participants provided voluntary written informed consent to complete anonymously and individually a battery of tests before training or competitions. The study procedures were carried out in accordance with the Declaration of Helsinki. The study design was approved by the Research Committee of the University of Foggia, with the agreement of each involved club.

### **Statistical analysis**

Confirmatory Factor Analysis (CFA) was performed in the first subsample using the statistical package LISREL 8.7 (Jöreskog and Sörbom, 2006). The multivariate normality test was preliminarily calculated by computing the Mahalanobis distances to exclude univariate and multivariate outliers. All analyses were based on the covariance matrices and the Maximum Likelihood (ML) estimation method was applied. The original five-factor solution (Model 1) with items loading on (a) Respect for social conventions; (b) Respect for the rules and the officials; (c) Respect for one's full commitment toward sport participation; (d) Respect and concern for the opponent; (e) Negative approach toward the practice of sport, was firstly tested. Subsequently, a refined solution of Model 1 was performed according to the modification indices (Model 1a); finally, a four-factor solution (Model 2) was proposed in which the Negative approach toward the practice of sport dimension was excluded following McCutcheon's (1999) suggestions.

The following goodness-of-fit indices were used: 1. the Chi-squared ( $\chi^2$ ) statistic and its degree of freedom; 2. the Root Mean Square Error of Approximation (RMSEA) and its 90% confidence interval (90% CI); 3. the Non-Normed Fit Index (NNFI); 4. the Comparative Fit Index (CFI); 5. the Standardized Root Mean Square Residuals (SRMR). For NNFI and CFI, values greater than or equal to .90 were accepted as indicators of a good fit; values greater than or equal to .95 were considered as indicators of an excellent fit. RMSEA and SRMR values of .08 or less indicated an adequate fit, whereas values of .06 or less reflected a good fit (Browne and Cudek, 1993; Hu and Bentler, 1999). The Chi-square model-difference test ( $\Delta\chi^2$ ) and the Expected Cross Validation Index (ECVI) were computed to compare the alternative models. The internal consistency of the total score and of the subscales scores of the MSOS was assessed using Cronbach's  $\alpha$  indices.

A path analysis was performed on the second subsample, to test the theoretically-predicted antecedents of sportspersonship. In the hypothesized model, task and ego orientations were the predictors, self-control and aggressiveness were the mediators, and sportspersonship was the outcome variable.

## **RESULTS**

### **Confirmatory Factor Analysis and Reliability**

Goodness-of-fit statistics for the factor structure of Models 1 and 2 are presented in Table 1. The CFA results indicated that the original five-factor model fitted data adequately (Model 1). The  $\chi^2$  goodness-of-fit tests were significant for each of the CFA models ( $\chi^2$  ranged from 668.08,  $df = 265$ , to 470.44,  $df = 164$ ,  $p < .001$ ).

However, a careful inspection of the factorial loadings in Model 1 revealed a weak association between item #3 with the third latent dimension ( $\lambda < .30$ ) "Respect for one's full commitment toward sport participation". Hence, the model with the 24 items and five latent dimensions (Model 1a) was re-evaluated. Since the utility of the chi-square goodness-of-fit test has been questioned (Hu and Bentler, 1998; Kline, 2011), additional fit indices were calculated to support the model fit. According to other goodness-of-fit indices (Schermelleh-Engel et al., 2003), both models equally fitted the observed data. When the nested models with scaled

difference in  $\chi^2$  tests (Brown, 2006) and the ECVI were investigated, Model 1a demonstrated a significantly better fit compared with Model 1. In contrast, Model 2 with a four-factor structure yielded adequate-to-excellent fit indices: SRMR, CFI, and NNFI were in the excellent range, and RMSEA was in the adequate range. However, when compared to Model 1a, Model 2 showed a significantly better fit. Taken together, the results supported the four “respect for” subscales of the MSOS.

Table 1. Fit indices for the factor structure models (N = 371)

	$\chi^2$	df	NNFI	CFI	SRMR	RMSEA	90% CI	ECVI
Model 1	700.99*	265	.96	.96	.061	.067	(.061; .073)	1.76
Model 1a	651.46*	242	.96	.96	.059	.068	(.061; .074)	1.62
M1vsM1a $\Delta$	49.53	23	$p < .001$					
Model 2	470.44*	164	.97	.97	.057	.074	(.067; .082)	1.03
M2vsM1a $\Delta$	181.02	78	$p < .001$					

\* $p < .001$ .

Model 1: 5 dimensions with 25 items.

Model 1a: 5 dimensions with 24 items (no item #3).

Model 2: 4 dimensions with 20 items.

Note. df = degrees of freedom, NNFI = NonNormed Fit Index; CFI = Comparative Fit Index; SRMR = Standardized Root Mean Square Residual; RMSEA = Root-Mean-Square Error of Approximation; ECVI = Expected Cross Validation Index; 90% CI = 90% Confidence Interval of RMSEA.

### Reliability and Correlations

Internal consistency reliability coefficients for the four-factor model were calculated. All subscales indicated from acceptable to good internal consistency, with Cronbach's  $\alpha$  coefficients of .88 for Factor 1, .81 for Factor 2, .69 for Factor 3 and .79 for Factor 4. Cronbach's  $\alpha$  coefficient was .89 for the total score. In addition, average inter-item correlations ranged between .30 and .61.

Table 2. Correlations between MSOS, AQ, TEOSQ and Socio-demographic variables at facet and domain level (N=371)

	2	3	4	5	6	7	8	9	10	11	12
1. MSOS – Total score	.879**	.844**	.598**	.843**	.476**	-.140**	-.262**	-.140**	-.178**	-.229**	-.187**
2. MSOS – 1 factor		.685**	.424**	.627**	.433**	-.134**	-.244**	-.094	-.197**	-.191**	-.201**
3. MSOS – 2 factor			.407**	.605**	.381**	-.158**	-.267**	-.150**	-.220**	-.251**	-.139**
4. MSOS – 3 factor				.314**	.487**	-.008	-.156**	-.069	-.148**	-.168**	-.062
5. MSOS – 4 factor					.291**	-.120*	-.173**	-.130*	-.037	-.142**	-.164**
6. Task orientation						.019	-.100	-.006	-.097	-.073	-.104*
7. Ego orientation							.192**	.185**	.134**	.120*	.101
8. AQ – Total score								.660**	.717**	.775**	.658**
9. AQ – Physical Aggression									.295**	.382**	.175**
10. AQ – Verbal Aggression										.504**	.281**
11. AQ – Anger											.317**
12. AQ – Hostility											

\*\* $p < .01$ ; \* $p < .05$

Bivariate correlation analyses were performed between the MSOS total score and aggressiveness, self-control and task and ego orientations before testing the hypothesized path model. All variables were significantly correlated ( $p < .01$ ) to sportspersonship, with  $r$  coefficients ranging from  $-.14$  (ego orientation) to  $.47$  (task orientation) (see Table 2).

### Path Analysis

The path model assumed sportspersonship as a dependent variable, task (TASK) and ego (EGO) orientations as orthogonal independent variables, and self-control (Self-Con) and aggressiveness (AQ) as mediator variables was tested on the second subsample. Also, direct and indirect relationships were assessed. The model was re-specified on the basis of the modification indices by removing step-by-step the non-significant paths, according to the rules of thumb values of  $t < 2$  provided by default in LISREL. Figure 1 shows the path diagram with the structural standardized coefficients of the final model.

As expected, sportspersonship was predicted positively by task orientation (directly,  $\beta = .44$ , and indirectly,  $\beta = .02$ ,  $p < .01$ ), and negatively by ego orientation (directly,  $\beta = -.10$ , and indirectly,  $\beta = -.04$ ,  $p < .05$ ). Self-control was predicted positively by task orientation ( $\beta = .36$ ,  $p < .01$ ) and negatively by ego orientation ( $\beta = -.12$ ,  $p < .01$ ). In turn, self-control indirectly predicted sportspersonship via aggressiveness ( $\beta = .07$ ,  $p < .05$ ).

Furthermore, aggressiveness was positively predicted only by ego orientation (directly,  $\beta = .18$ , and indirectly,  $\beta = .04$ ,  $p < .05$ ). Surprisingly, no significant direct association was observed between self-control and sportspersonship orientations, whereas aggressiveness showed a medium-to-low direct association with sportspersonship ( $\beta = -.20$ ,  $p < .05$ ) (see Figure 1). The fit indices values of the final path model were  $\chi^2$  ( $df = 3$ ) = 11.66,  $p = .008$ , CFI = .98, GFI = .99, SRMR = .023, RMSEA = .06; 90% CI = .026 - .098, NNFI = .95. Thus, the proposed model fitted the empirical data very well.

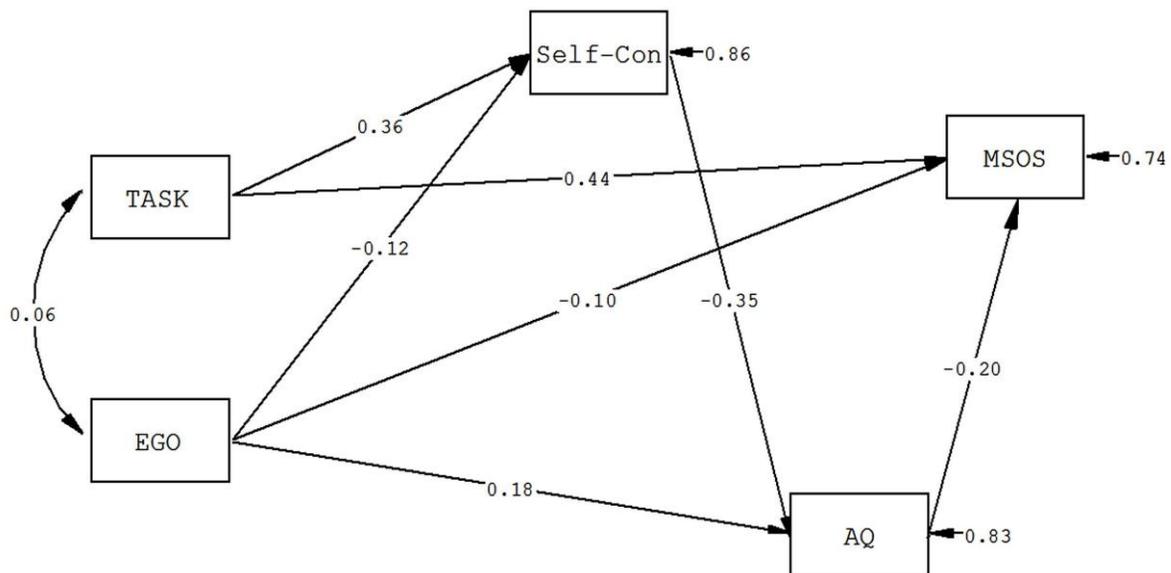


Figure 1. Path Analysis.

## DISCUSSION AND CONCLUSIONS

The present research aimed at examining a path model in which the personality dispositions of self-control and aggressiveness mediated the relationship between motivational factors and sportspersonship. Before testing the hypothesized model, the psychometric properties of the MSOS were evaluated to overcome the weaknesses/limitations emerged in the original version and to provide the Italian version of the instrument. Results from the CFAs performed in the first subsample supported the 20 item four-factor model, where the dimension of the negative approach was removed. The updated scale showed a satisfactory level of reliability. Consistently with the studies that had proposed a four-factor solution of the instrument (Donahue et al., 2006; Lemyre et al., 2002; Miller et al., 2004), these findings confirmed the assumption that the operationalization of sportspersonship involves only the “respect for” dimensions which highlight a positive interpretation of the construct.

The results from the path model supported the expected relationships, thus contributing to a better understanding of the role played by dispositional factors as antecedents of sportspersonship. Indeed, literature has generally focused on the consequences of sportspersonship orientations (Chantal et al., 2005), as well as on other predictive variables, such as contesting orientations or empathy (Shields et al., 2015).

When looking at the relations between the variables, results indicated that sportspersonship was predicted positively by task orientation and negatively by ego orientation. Consistently with previous research (Bortoli et al., 2012; Lee et al., 2008; Monacis et al., 2015), ego-oriented goals in athletes are typically associated to unethical behaviours, whereas task-oriented goals are related to sportspersonlike conducts. The latter orientation was further related to self-control: athletes high in task orientation, being more independent and persistent in their actions, have more self-control, i.e., the tendency to regulate their emotions, thoughts, and behaviours in the face of impulses. On the contrary, the former orientation determined low levels of self-control: as ego-oriented athletes feel successful only when opponents are outperformed, they cannot control their thoughts, feelings, or behaviours and may handle conflicts less constructively.

Noteworthy, a total indirect effect of self-control on sportspersonship through aggressiveness was observed. The indirect effect could explain the real nature of self-control, considered as a mechanism for controlling aggressiveness and maladaptive conducts in sport domains (Sofia and Cruz, 2015): higher levels of self-control seem to reduce aggressiveness, thus promoting sport-like behaviours. Following Hagger's (2013) suggestions on the role of self-control within a multiple pathway model, the empirically based model proposed in this research showed how and to what extent the self-control resource could be a mediator in the relationship between ego orientation, aggressiveness, and sportspersonship: athletes who tend to socially compare their success and are able to suppress impulsive determinants of aggressiveness, may engage in more adaptive and fair-play behaviours. Additionally, in line with Tangney et al.'s (2004) definition of self-control as “the ability to override or change one's inner responses, as well as to interrupt undesired behavioural tendencies (such as impulses) and refrain from acting on them” (p. 274), the current cross-sectional study confirmed the positive effects of the self-control in diminishing maladaptive behaviours.

In terms of practical implications, the findings provide a more comprehensive conceptualization of those factors that contribute to intra and inter individual differences in sportspersonship and allow practitioners to implement more effective intervention programs tailored to athletes.

Some factors limit the generalizability of the research findings reported here. A more balanced sample in terms of gender and types of sport would allow for testing the measurement invariance of the factor solution

of the MSOS and the proposed causal model. Besides this, the cross-sectional nature of the study does not allow for inferring causal relationships between the variables.

Further studies could examine the conceptual meta-theory of the “I cube” model (Slotter and Finkel, 2011) by analysing the interaction between its three processes of instigation, inhibition, and impellance, in order to better understand the problem of unsportsmanlike behaviours at competitive levels.

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