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# Sport and Exercise Psychology: Human Performance, Well-Being and Health

Proceedings of the 13<sup>th</sup> FEPSAC European Congress of Sport Psychology



Sidónio Serpa  
Nelson Teixeira  
Maria João Almeida  
António Rosado







# **Sport and Exercise Psychology: Human Performance, Well-Being and Health**

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“The texts are published according to the original version sent by the authors”.



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In addition, to shed light on cognitive processes underlying the assessment of performance-related affective state, decision time required to report current affective state was measured as a function of individual affect-related performance zones.

Eight elite shotgun shooters participated in this study. Subjects estimated their pre-performance affective experience in terms of pleasantness and activation using a standardized electronic version of Affect Grid (Russell, Weiss, & Mendelsohn, *Journal of Personality and Social Psychology* 1989; 57: 493-502).

IZOF probabilistic method (Kamata, Tenenbaum, & Hanin, *Journal of Sport and Exercise Psychology* 2002; 13: 1-15) was used for data analysis.

The findings illustrate unique IAPZs and IZOFs for optimal performance on the dimensions of pleasantness and activation. Individual subjects demonstrated varying probabilistic zones of optimal functioning, within which they perform optimally with a certain likelihood. Importantly, results reveal that optimal pleasantness is experienced only in combination with optimal activation. Finally, decision time required to report current affective state is significantly lower prior to the performance characterized by high pleasantness and low activation compared with performance characterized by high pleasantness and high activation. Assessment of affective state is positively related to the perceived intensity of pleasantness. We propose a powerful expansion of the Affect Grid for assessment of affect-related performance zones.

## P2.20

### **Transcultural validation of an extended model of the Theory of Planned Behavior in a physical activity context in adolescents.**

Francis Ries (University of Seville, Spain)

José Manuel Sevillano (University of Seville, Spain)

The aim of this study was to develop an instrument to predict the intention and physical activity (PA) behavior using the Theory of Planned Behavior (TPB) as a framework and to test its transcultural validity in two specific cultures. We constructed a 39-item questionnaire (translated into Spanish, French and German by standardized parallel back-translation). After exploratory factorial analysis, "Attitude toward PA", "Perceived Physical Competence", "Parents' PA", "Perceived Parental Support", and "Perceived Resources" were hypothesized as the standard constructs of the TPB. Following a pilot study, the questionnaire was completed by 613 Spanish and 752 Luxembourgish high school students. Subsequently, a confirmatory factor analysis ratified the identical factorial structure for each sample (with 77% of item-factor correlations greater than .70). Internal consistency for each factor ranged between .735 and .944. Finally, in order to study the predictive power of the constructs on intention and actual PA behavior, we used structural equation models, showing acceptable fit index for both cultural contexts (Spain: RMSEA = 0.80; Luxembourg: RMSEA = 0.79). The analysis of structural invariance using multi-sample approach found that the predictive value of each of the factors corresponded to the hypothesized TPB constructs, but differed according to population. In light of the results, we conclude that the developed questionnaire is useful in predicting adolescents' intention and PA behavior and in validating the transcultural application of the extended TPB in the two different cultures.

## P2.21

### **Confirmatory factor analysis of the Competitive State Anxiety Inventory in Mexican university athletes.**

Jeanette Lopez-Walle (Faculty of Sport Organization, UANL, Mexico)

Briseida Ramirez (Faculty of Sport Organization, UANL, Mexico)

Jose Tristan (Faculty of Sport Organization, UANL, Mexico)

Jose Perez (Faculty of Sport Organization, UANL, Mexico)

Oswaldo Ceballos (Faculty of Sport Organization, UANL, Mexico)

The aim of this study is to evaluate the factor structure of the Competitive State Anxiety Inventory - 2R (Cox, Martens & Russell, 2003) in its Spanish version (Andrade, Lois & Arce, 2007) using the confirmatory factor analysis on Mexican university athletes. Participated 923 athletes (Mage = 21.28, SD = 3.14513), 18 - 25 years old, 493 male and 423 female. The questionnaire consisted of 18 items, divided into three subscales: Cognitive Anxiety, Somatic Anxiety and Self-confidence. Interviews took place on a one-to-one basis at the competition venue. The results demonstrated an acceptable reliability in the three subscales ( $\hat{\alpha} = .834$ , CA;  $\hat{\alpha} = .893$ , SA;  $\hat{\alpha} = .899$ , Sc). The three factors explained the 63.21% of the total variance, dividing each of the items into theoretically devised factors; when carrying out the confirmatory factor analysis, the fit indices obtained are:

$\chi^2 = 654.02$ ,  $df = 132$ ,  $\chi^2/df = 4.96$ ,  $CFI = .94$ ,  $IFI = .94$ ,  $NNFI = .92$ ,  $RMSEA = .67$ , confirming the factor structure of CSAI 2R in Mexican university athletes. Results are discussed in terms of their theoretical use and practice.



## **P2.22**

### **Reliability and Validity of the Taiwan Version Motivation Scale for Physical Education in Elementary School.**

Kun-Wei Tu (National Taiwan Sport University, Taiwan)  
Chun-Wei Chiu (National Taiwan Sport University, Taiwan)  
Tai-Wei Hsiang (National Taiwan Sport University, Taiwan)  
Chien-Heng Chu (National Taiwan Sport University, Taiwan)  
Yu-Kai Chang (National Taiwan Sport University, Taiwan)

Fostering motivation in physical education classes for elementary school students is important. Student with positive motivation at this developmental stage will not only impact their sport/exercise participation in the future, but also influence their personal lives. Although there are many useful questionnaires designed to monitor the motivation among younger and college-age population, there was no Taiwan version of a motivation scale for elementary school students. Therefore, the purpose of this study was to establish a Taiwan version of a reliable and valid motivational scale. 150 sixth grade students (male: 74, female: 76) were included in the present study. Three scales were modified to examine the various motivations, including: a) Perceived Autonomy Support Scale, PASS, adapted from Standage, Duda, and Ntoumanis (2006); b) Autonomy Scale, AS, adapted from Standage et al. (2003); and c) Physical Motivation Scale, PMS, adapted from Ntoumanis (2001). A Pearson product moment correlation, t-test, and exploratory factor analysis were computed for these three scales. The results indicated that: a) PASS with 6 items resulted in one factor referred to as teacher autonomy support. The Cronbach  $\alpha$  is 0.76 with explained accounted variance of 46.6%; b) AS with five items resulted in two factors referred to as activity participation and their own sense of feeling. The Cronbach  $\alpha$  is 0.72 with total explained accounted variance of 71.4%; c) PMS with 30 items resulted in five factors referred to as intrinsic motivation, identified regulation, introjected regulation, external regulation, and non-motivation. The Cronbach  $\alpha$  ranged from 0.77-0.91 with a total explained and accounted for variance of 65.4%. Collectively, the study concludes that the Taiwan version of the PASS, AS and PMS have appropriate reliability and validity for assessing perceived autonomy support, autonomy support, and motivations for physical education among the elementary school students.

## **P2.23**

### **Social Psychology in Sport in JCR journals: bibliometric analysis.**

M. Reyes Bueno Moreno (University of Seville, Spain)

A bibliometric analysis of the impact of Social Psychology in Sport including in Sport Psychology Journals on the Journal Citation Reports is carried out. Thus, it is possible to make an analysis of: 1) the existence of the Social Psychology in Sport as an area of knowledge and 2) the recurrent topics of research in Social Psychology in Sport.

Bibliometric analysis shows 1) a progressive interest in themes of the Social Psychology of Sport in the last decade, and 2) the recurrence of topics such as leadership, group cohesion, interpersonal relationships or fair play.

Taken as a starting point these results, for Social psychology in Sport is necessary begin to study or develop issues such as team beginnings, team development, morality and passion for sport, group influence processes, etc.





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## Confirmatory factor analysis of the Competitive State Anxiety Inventory in Mexican university athletes

Jeanette M. López-Walle, Briseida Ramírez, José Tristán Rodríguez,  
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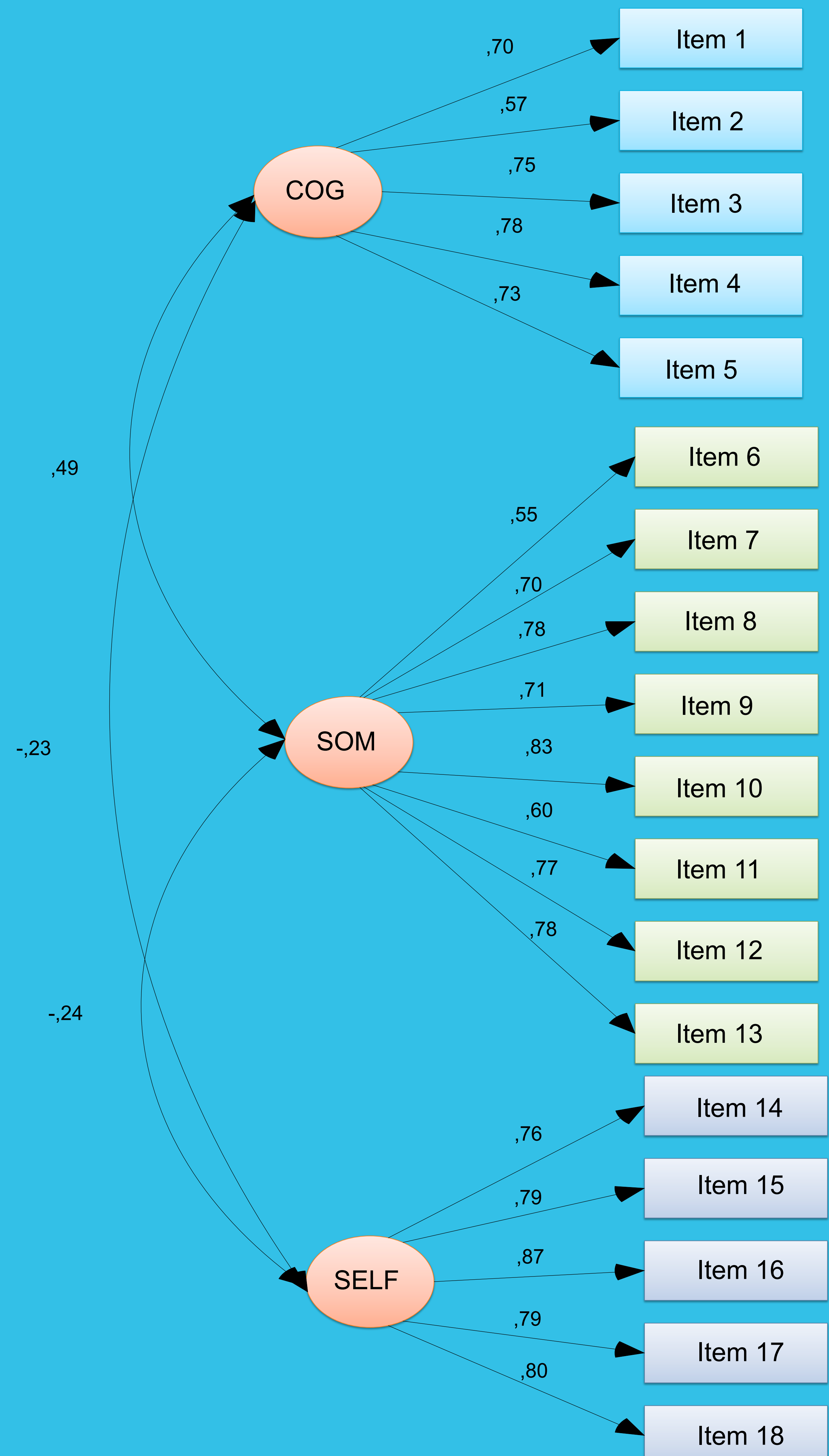
The aim of this study is to evaluate the factor structure of the Competitive State Anxiety Inventory - 2R (Cox, Martens & Russell, 2003) in its Spanish version (Andrade, Lois & Arce, 2007) using the confirmatory factor analysis on Mexican university athletes.

Anxiety is among the most frequently investigated variables in sport psychology (see Hardy, Jones, and Gould, 1996; Jones, 1995). It is usually conceptualised as a multidimensional construct comprising cognitive and somatic components (Martens, Vealey, and Burton, 1990). Cognitive anxiety is typified by negative self-images and self-doubts, while somatic anxiety is typified by increased heart rate, tense muscles and clammy hands. The Competitive State Anxiety Inventory-2 (CSAI-2: Martens, Burton, Vealey, Bump, and Smith, 1990) has been the measure of choice for most researchers of competition anxiety during the past decade. The CSAI-2 also assesses self-confidence, which is characterised by positive expectations of success.

The CSAI-2 has 18 items with nine items in each of three subscales: Cognitive Anxiety, Somatic Anxiety, and Self-confidence. Given the research interest in competitive state anxiety and self-confidence, and the extent to which tests of theory rely upon valid measurement, demonstration of the factorial validity of anxiety measures is an imperative. There are many arguments to suggest that it would be prudent to re-evaluate the factor structure of the CSAI-2 in Mexican university athletes.

Participated 923 athletes (Mage = 21.28, SD = 3.14513), 18 - 25 years old, 493 male and 423 female. The questionnaire consisted of 18 items, divided into three subscales: Cognitive Anxiety, Somatic Anxiety and Self-confidence. Interviews took place on a one-to-one basis at the competition venue.

The results demonstrated an acceptable reliability in the three subscales ( $\alpha = .834$ , CA;  $\alpha = .893$ , SA;  $\alpha = .899$ , Sc). The three factors explained the 63.21% of the total variance, dividing each of the items into theoretically devised factors;



Scale	$\alpha$
Cognitive Anxiety	.83
Somatic Anxiety	.89
Self-confidence	.90

When carrying out the confirmatory factor analysis, the fit indices obtained are:  $\chi^2 = 654.02$ ,  $df = 132$ ,  $\chi^2/df = 4.96$ , CFI = .94, IFI = .94, NNFI = .92, RMSEA = .067, confirming the factor structure of CSAI 2R in Mexican university athletes. Results are discussed in terms of their theoretical use and practice.

Conclusion. Reliability and validity of the CSAI-2R is good indicating that can be applied in the Mexican population.

FOUNDING SOURCES:  
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