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## ORIGINAL

# TRANSCULTURAL ANALYSIS OF MOTIVATIONAL CLIMATE IN STUDENTS IN COSTA RICA, MEXICO AND SPAIN

## ANÁLISIS TRANSCULTURAL DEL CLIMA MOTIVACIONAL EN ALUMNADO DE COSTA RICA, MÉXICO Y ESPAÑA

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### AGRADECIMIENTOS O FINANCIACIÓN

Este estudio forma parte de un Proyecto longitudinal para medir la influencia de variables de la Educación Física y la actividad física en el tiempo de ocio en los hábitos de práctica a lo largo del tiempo.

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## ABSTRACT

The aim of this paper is to find out how satisfaction, motivation and belief in success in physical and sports leisure time activities of students in secondary education predict the perceived motivational climate in physical education in three different cultural contexts. The sample consisted of 2168 students from three different countries, belonging to Costa Rica 423, 408 to Mexico and a total of 1337 students to Spain, all aged between 11 and 16 years. The Scales Motivational Climate, Satisfaction Intrinsic in Sport, Sport and Inventory Motivation Perceptions of Beliefs on the Causes of Success in Sport were used. The results found in this research show similar trends in all three countries in terms of mastery prediction as well as performance-approach, performance-avoidance, and social approval.

**KEYWORDS:** Achievement goals, physical education, motivation, physical activity, free time.

## RESUMEN

El objetivo de este trabajo es conocer como la satisfacción, la motivación y las creencias de éxito en las actividades físico-deportivas de tiempo libre del alumnado de educación secundaria, pueden predecir el clima motivacional percibido en Educación Física en tres contextos culturales diferentes. La muestra estuvo compuesta por 2168 estudiantes de tres países diferentes, perteneciendo 423 a Costa Rica, 408 a México y un total de 1337 alumnos a España, todos ellos con edades comprendidas entre 11 y 16 años. Para ello se utilizaron las escalas de *Clima Motivacional*, *Satisfacción Intrínseca en el Deporte*, *Motivación Deportiva e Inventario de Percepción de las Creencias sobre las Causas del Éxito en el Deporte*. Los resultados encontrados en esta investigación muestran similares tendencias en los tres países tanto en la predicción de la maestría, como en el rendimiento-aproximación, rendimiento-evitación y en la aprobación social.

**PALABRAS CLAVE:** Metas de logro, educación física, motivación, actividad física, tiempo libre.

## INTRODUCTION

Based on Achievement Goal Theory (Nicholls, 1989) and Self-Determination Theory (Deci & Ryan, 2000), a large number of research studies from different perspectives have been written which aim, among other things, at explaining actions and behaviours in Physical Education students (Baños, Ortiz-Camacho, Baena-Extremera, Tristán-Rodríguez, 2017; Gómez-López, Granero-Gallegos, Baena-Extremera, & Abrales, 2014; Juliá & Baena-Extremera, 2018).

As for Achievement Goal Theory, authors such as Papaioannou, Tsigilis, Kosmidou & Milosis (2007) found that students can show four different orientations when it comes to achieving their goals: mastery-approach, performance-approach, performance-avoidance and social acceptance. These goals are particularly important in students as there are certain behaviours which imply being more oriented to a given goal above the others. For instance, according to Baena-Extremera & Granero-Gallegos (2015), mastery goals predict satisfaction with Physical Education and school and are related to students who aim at improving their skills and who have high intrinsic motivation, etc. (Roberts & Treasure, 2018). On the other hand, performance goals tend to be related to extrinsic motivation, to a performance and competence climate (Cook, Castillo, Gas, & Artino, 2017), and to disadaptive approaches to learning, demotivation and anxiety (Roberts & Treasure, 2018).

The importance of these models lies mainly in their relation to Physical Education students' motivation. Motivation has been studied by means of a series of theories, Self-Determination Theory among them. According to this theory, three types of motivation can be observed: intrinsic, extrinsic and amotivation. Delving in more depth, intrinsic motivation can be knowledge-related, achievement-related, or related to motivating experiences (Ryan & Deci, 2000). Following Deci & Ryan (2000), extrinsic motivation is related to behaviours driven by instrumental reasons or external sources and includes identified regulation, introjected regulation and external regulation. Finally, amotivation or relative absence of motivation is observed when athletes are not intrinsically or extrinsically motivated (Vella, Swann, Allen, Schweickle, & Magee, 2017).

Motivation is a variable which affects students significantly, not only in terms of academic performance but also in terms of their school and after-school physical activity practice. (Granero-Gallegos, Baena-Extremera, Pérez-Quero, Ortiz-Camacho, & Bracho-Amador, 2012) and it even promotes enjoyment, interest and continuance (Ryan & Deci, 2000).

Intrinsic and extrinsic motivation has recently been shown to predict satisfaction and enjoyment in Physical Education, boredom having a negative relationship with amotivation (Baena-Extremera et al., 2016). Thus, these authors claim that the reason why students are satisfied with Physical Education is probably related to high motivation levels, mainly intrinsic motivation. According to Weiner's Attribution Theory (1986), students' belief in their Physical Education success also has an impact on their motivation. Following this construct, belief in success occurs in achievement contexts after any given result obtained by

students, who will see it either as success or failure and will accordingly result in a positive or negative sensation (Navas, Holgado, Soriano, & Sampascual, 2008). A student can attribute a successful result to their own efforts, to the level of difficulty of the task and to the luck factor, the importance given to academic success or failure being one of the most important factors according to Weiner (1986). However, very few studies have been carried out in the Physical Education field.

Based on existing knowledge in this field and this line of research (Ruíz-Juan, Ortiz-Camacho, García-Montes, Baena-Extremera, & Baños, 2018), the aim of this study was to find out how satisfaction, motivation and belief in success during high school students' leisure-time sports activities can predict the motivational climate perceived in Physical Education in three different cultural contexts, namely Costa Rica, Mexico and Spain.

## **METHOD**

### ***Participants***

A total of 2168 students in the first year of ESO (compulsory secondary education) participated in this longitudinal study. They come from Costa Rica (423), Mexico (408) and Spain (1337). In terms of gender, the sample included 1052 boys (50.4%) and 1037 girls (49.6%), 79 students did not specify gender. Students came from state schools (86.6%) and chartered schools (13.4%). The age range was 11 - 16 years old ( $M=12.49$ ;  $SD=.81$ ), the mean age for boys being 12.53 ( $SD=.87$ ) and 12.44 ( $SD=.74$ ) in the case of girls. The longitudinal study was carried out between February and June, 2011.

### ***Procedure***

First, we asked permission to carry out the study to schools through an explanatory letter stating the research objectives and procedure and a model of the instrument was attached.

The instrument was self-administered and large-scale in terms of application, and was to be completed anonymously during school hours after obtaining informed consent from parents and/or tutors, and after receiving instructions from evaluators. Participants thus selected received information on the object of the study, its voluntary nature, and the total confidentiality of answers and data management. They were explained that there were no correct or incorrect answers and they were accordingly asked to give true and honest answers.

The study was approved by the Bioethics Committee of the University of Murcia.

### ***Instruments***

*Clima motivacional percibido del profesor de Educación Física* by Ruiz-Juan (2014), the Spanish version of *Perceptions of Teacher's Emphasis on Goals Questionnaire (PTEGQ)* by Papaioannou, Milosis, Kosmidou, & Tsigilis (2007).

This instrument was designed to measure students' perceptions of their Physical Education teachers. It includes 24 items and a 1-5 Likert-type scale (1 –*totally disagree* – to 5 –*totally agree*). The instrument has four sub-scales: mastery, performance-approach, performance-avoidance, and social acceptance.

*Cuestionario de Satisfacción Intrínseca en el Deporte* by Balaguer, Atienza, Castillo, Moreno & Duda (1997), the Spanish version of *Sport Satisfaction Instrument (SSI)* by Duda & Nicholls, (1992). This instrument was designed to measure levels of enjoyment when doing leisure time sports physical activities. It includes eight items and a 1-5 Likert-type scale (1 – *totally disagree* – to 5 – *totally agree*). The instrument has two scales, one measuring enjoyment (five items) and the other measuring boredom (three items) during sports physical activity.

*Escala de Motivación Deportiva* by Carratalá (2003), Spanish version of *Sport Motivation Scale (SMS)* by Pelletier, Vallerand, Green-Demers, Brière & Blais (1995). This instrument was designed to measure the three types of intrinsic motivation (knowledge, achievement, and motivating experiences), and the three extrinsic motivation regulations (external, introjected and identified) and amotivation. It includes 28 items and a 1-7 Likert type scale (1 –*It does not correspond at all*- to 7 –*It totally corresponds*–, with an intermediate score of 4 –*It somewhat corresponds*). The instrument has seven sub-scales corresponding to the types of motivation previously mentioned: intrinsic, extrinsic and amotivation (four items per sub-scale).

*Inventario de Percepción de las Creencias sobre las Causas del Éxito en el Deporte* by Castillo, Balaguer & Duda (2002), the Spanish version of *Beliefs About the Causes of Sport Success Questionnaire (BACSSQ)* by Duda & Nicholls (1992). This instrument was designed to measure subjects' perceptions on whether effort (efforts made to carry out a task), skill (factors related to possession of skills) and the use of deception techniques (deception behaviours) are the cause of success in sports. It includes 18 items (nine for effort, four for skill and five for deception techniques) and 1-5 Likert-type scale (1 –*totally disagree*- to 5 – *totally agree*).

### ***Psychometric properties of the instruments***

In order to calculate the psychometric properties of the scales in the four instruments, we followed the procedure set out by Carretero-Dios & Pérez (2005). Consequently, no items or answer options were eliminated as they met the set requisites. The item-total corrected correlated coefficient was  $\geq .30$  and standard deviation  $>1$ .

Furthermore, the homogeneity analysis revealed the absence of item overlapping across the theoretical dimensions of the questionnaires. Standard normal distribution was confirmed based on the skewness and kurtosis indices given that, following Bollen & Long (1994), these indices were close to zero (0) and  $<2.0$ .

The factor validity of the four scales was assessed using confirmatory factor analysis (CFA). The procedural aspects in these analysis were bootstrapping, maximum likelihood (the latter being justified in view of the lack of multivariate normal distribution of the data), and model fit with a combination of absolute and relative fit indices.

The models of the four scales presented adequate values (acceptable goodness of fit in the original model) (Kline, 1998) (Table 1). The standardized coefficients of the latent variable relationship with each of the items ranged between .64 and .95. The factor loads were >.60 and >1.96 t-value in all cases, which guarantees the convergent validity of each instrument/scale (Hair, Black, Babin, & Anderson, 2009). In terms of sub-scales, they all associated to satisfactory internal consistency ( $\alpha=.70-.92$ ).

**Table 1.** Model fit indices.

		<i>n</i>	$\chi^2/df$	TLI	IFI	CFI	RMSEA	SRMR
Costa Rica	Motivational climate (PTEGQ)	378	1.98	.95	.96	.97	.04	.03
	Intrinsic Satisfaction in Sports (SSI)	311	2.59	.93	.93	.93	.04	.03
	Motivation in sports-physical activity practice (SMS)	298	2.18	.95	.94	.93	.03	.02
	Beliefs about the causes of sport success (BACSSQ)	313	3.12	.92	.92	.91	.04	.04
Mexico	Motivational climate (PTEGQ)	389	3.76	.92	.91	.91	.04	.05
	Intrinsic Satisfaction in Sports (SSI)	137	3.75	.94	.92	.93	.06	.03
	Motivation in sports-physical activity practice (SMS)	137	3.57	.92	.91	.92	.06	.04
	Beliefs about the causes of sport success (BACSSQ)	394	3.43	.95	.93	.95	.06	.03
Spain	Motivational climate (PTEGQ)	1085	2.79	.95	.95	.94	.04	.04
	Intrinsic Satisfaction in Sports (SSI)	812	3.72	.95	.94	.95	.06	.03
	Motivation in sports-physical activity practice (SMS)	798	3.17	.94	.94	.94	.06	.04
	Beliefs about the causes of sport success (BACSSQ)	1061	3.11	.95	.93	.95	.06	.03
		<b>Desirable</b>	<5	>.9	>.9	>.9	<.08	<.05

Source: authors

### Data analysis

We used SPSS Statistics 17.0 for Windows to carry out the items analysis, homogeneity, sub-scales correlation (Pearson coefficient), internal consistency (Cronbach's alpha), mean differences across countries (ANOVA), correlations between all the sub-scales dimensions and hierarchical linear regression. The factor structure was analyzed with a SPSS Amos 21.0 for Windows CFA.

## RESULTS

### *Descriptive statistics*

Statistically significant differences ( $p<.001$ ) were found across the means of each variable analyzed per country. In terms of motivational climate, the highest scores were observed in mastery-climate ( $M=4.05$ ,  $SD=.73$ , Mexico) while the lowest were in performance-avoidance ( $M=2.71$ ,  $SD=.89$ , Spain). However, Costa Rican students obtained the highest scores in all four sub-scales (except for mastery), followed by Mexican and Spanish students.

As to intrinsic satisfaction, means were high in the enjoyment variable in all three countries, Spanish and Mexican students ( $M=4.24$ ,  $SD=.82$ ,  $M=4.23$ ,  $SD=.85$ , respectively) scoring slightly higher than Costa Ricans ( $M=3.95$ ,  $SD=1.00$ ). However, the boredom sub-scale showed low mean values, the Spanish students scoring the lowest mean value ( $M=1.93$ ,  $SD=.89$ ).

With regard to motivation, Mexican students showed higher mean values than students from Costa Rica and Spain in each of the variables. A considerable mean rise trend was observed as the level of self-determination increased. In the case of Mexican students, values shifted from  $M=4.02$  ( $SD=1.63$ ) in amotivation to  $M=5.63$  ( $SD=1.28$ ) in knowledge intrinsic motivation. Spanish students showed the lowest amotivation mean ( $M=2.83$ ,  $SD=1.60$ ) with significant differences when compared to Costa Rican students ( $M=3.57$ ,  $SD=1.70$ ).

In the case of perception of beliefs about the causes of success in sport, statistically significant differences ( $p<.010$ ) were found in the deception variable, Costa Ricans showing the highest values ( $M=2.84$ ,  $SD=1.05$ ), followed by Mexicans ( $M=2.73$ ,  $SD=.99$ ) and Spaniards ( $M=2.63$ ,  $SD=1.00$ ), but always with lower values in relation to belief in skill (means 3.17-3.31) and effort (means 3.86-3.96).

**Table 2.** Alpha coefficient, mean (*M*) and standard deviation (*SD*) for motivational climate (*PTEGQ*), Intrinsic sports satisfaction (*SSI*), Motivation in sports-physical practice (*SMS*) and Perception of beliefs about the causes of success in sports (*BACSSQ*). Differences by country.

	Costa Rica			Mexico			Spain			F	Sig.
	<i>α</i>	<i>M</i>	<i>DT</i>	<i>α</i>	<i>M</i>	<i>DT</i>	<i>α</i>	<i>M</i>	<i>DT</i>		
<b>PTEGQ</b>											
<i>Mastery</i>	.79	3.88	.86	.73	4.05	.73	.79	3.62	.87	42.45	.000
<i>Performance-approach</i>	.78	3.24	1.01	.76	3.16	.97	.78	2.76	.96	46.51	.000
<i>Performance-avoidance</i>	.79	3.02	1.05	.73	2.85	.96	.72	2.71	.89	15.75	.000
<i>Social acceptance</i>	.85	3.40	1.07	.85	3.36	1.05	.85	3.01	1.01	28.75	.000
<b>SSI</b>											
<i>Enjoyment</i>	.84	3.95	1.00	.80	4.23	.85	.85	4.24	.82	12.39	.000
<i>Boredom</i>	.70	2.28	1.12	.76	2.00	1.07	.73	1.93	.89	14.60	.000
<b>SMS</b>											
<i>Intrinsic Motivation</i>	.91	4.70	1.42	.87	5.44	1.14	.92	5.06	1.33	15.62	.000
<i>Knowledge</i>	.79	4.84	1.56	.76	5.63	1.28	.80	5.16	1.43	14.02	.000
<i>Achievement</i>	.78	4.76	1.54	.72	5.48	1.27	.77	5.11	1.39	13.11	.000
<i>Motivating experiences</i>	.79	4.51	1.58	.74	5.23	1.32	.81	4.96	1.48	13.87	.000
<i>Extrinsic Motivation</i>	.89	4.50	1.32	.86	5.26	1.15	.87	4.60	1.27	18.64	.000
<i>External</i>	.75	4.22	1.53	.77	5.04	1.40	.74	4.20	1.55	18.09	.000
<i>Introjected</i>	.77	4.59	1.37	.74	5.44	1.25	.77	4.92	1.36	18.70	.000
<i>Identified</i>	.79	4.70	1.55	.74	5.31	1.28	.71	4.68	1.43	11.20	.000
<i>Amotivation</i>	.76	3.57	1.70	.76	4.02	1.63	.74	2.83	1.60	44.44	.000
<b>BACSSQ</b>											
<i>Effort</i>	.87	3.86	.89	.86	3.95	.83	.87	3.96	.82	1.83	.160
<i>Skill</i>	.77	3.17	1.01	.74	3.31	.94	.70	3.26	.92	1.74	.175
<i>Deception</i>	.78	2.84	1.05	.74	2.73	.99	.79	2.63	1.00	5.39	.005

\*(*p*<.05), \*\*(*p*<.01), \*\*\*(*p*<.001)

Source: authors

*Relationships of motivational climate with intrinsic satisfaction, motivation and beliefs about the causes of success in sport*

Table 3 shows the results of the correlations, the results being highly similar in all three countries. In terms of the correlation of the motivational climate factors in Physical Education, they all intercorrelated in a positive and significant way in all three countries.

Furthermore, mastery has a low and moderate positive correlation with the rest of the variables, except for boredom, amotivation, skill and deception. Similarly, performance-approach and performance-avoidance have a low and moderate positive correlation with boredom, extrinsic motivation, external regulation (except for performance-avoidance), introjected regulation, identified regulation, amotivation, skill, and deception, and a negative correlation with effort, not correlating with the rest of the variables. Finally, social acceptance has a low to moderate positive correlation with the rest of the variables, except for enjoyment, boredom, and effort.

**Table 3.** Correlations between the sub-scales of motivational climate (*PTEGQ*), Intrinsic sports satisfaction (*SSI*), Motivation in sports-physical practice (*SMS*) and Perception of beliefs about the causes of success in sports (*BACSSQ*). Differences by country.

	Costa Rica (n = 298)				Mexico (n = 137)				Spain (n = 798)			
	MA S	P-A	P- AV	S-A	MA S	P-A	P- AV	S-A	MA S	P-A	P- AV	S-A
<b>PTEGQ</b>												
<i>Mastery</i>	1	.34*	.33*	.43*	1	.31*	.19*	.35*	1	.30*	.25*	.50*
<i>Performance-approach</i>	.34*	1	.65*	.71*	.31*	1	.59*	.65*	.30*	1	.65*	.65*
<i>Performance-avoidance</i>	.33*	.65*	1	.64*	.19*	.59*	1	.55*	.25*	.65*	1	.54*
<i>Social acceptance</i>	.43*	.71*	.64*	1	.35*	.65*	.55*	1	.50*	.65*	.54*	1
<b>SSI</b>												
<i>Enjoyment</i>	.16*	.02	.06	.06	.18*	.02	.13	.11	.16*	-.06	-.06	.02
<i>Boredom</i>	.03	.15*	.22*	.08	.01	.18*	.17*	.13	-.04	.16*	.20*	.06
<b>SMS</b>												
<i>Intrinsic</i>	.36*	.03	.05	.26*	.20*	.06	-.02	.17*	.23*	.06	.02	.16*
<i>Motivation Knowledge</i>	.33*	.08	.09	.37*	.23*	.11	-.00	.22*	.17*	.02	.01	.13*
<i>Achievement</i>	.32*	.09	.05	.34*	.18*	.09	.01	.20*	.18*	.04	.01	.14*
<i>motivating experiences</i>	.37*	.09	.08	.36*	.21*	.12	-.00	.22*	.21*	.05	.03	.15*
<i>Extrinsic motivation</i>	.31*	.29*	.25*	.42*	.19*	.25*	.17*	.31*	.11*	.19*	.19*	.26*
<i>External</i>	.31*	.19*	.01	.35*	.26*	.18*	.07	.24*	.16*	.10*	.07	.19*
<i>Introjected</i>	.36*	.26*	.25*	.41*	.19*	.19*	.18*	.24*	.21*	.14*	.12*	.26*
<i>Identified</i>	.37*	.28*	.27*	.45*	.23*	.24*	.19*	.30*	.19*	.17*	.15*	.27*
<i>Amotivation</i>	.04	.33*	.37*	.30*	.05	.19*	.20*	.18*	.02	.25*	.26*	.19*
<b>BACSSQ</b>												
<i>Effort</i>	.31*	-	-	.07	.24*	-	-	.05	.11*	-	-	.01
	*	.15*	.14*		*	.12*	.20*		*	.07*	.12*	
<i>Skill</i>	.05	.35*	.25*	.36*	.05	.28*	.17*	.30*	.03	.17*	.08*	.13*
		*	*	*		*	*	*		*	*	*
<i>Deception</i>	.02	.34*	.35*	.28*	.03	.27*	.26*	.22*	.00	.21*	.17*	.14*
		*	*	*		*	*	*		*	*	*

\*(p<.05), \*\*(p<.01)

MAS=Mastery, P-A=Performance-approach, P-AV=Performance-avoidance, S-A=Social acceptance

Source: authors

### Multivariate regressive analysis

This analysis included only active subjects, that is, those who do sports-physical activity in their free time. A multivariate linear regression analysis was carried

out taking the motivational climate (and its sub-scales) means as the dependent variable and each of the variables of intrinsic satisfaction in sport, motivation in sports-physical practice and perception of beliefs about the causes of success in sport as predictor variables. Country was used as a selection variable.

We obtained solid models which largely explained variance in each country (33%-49%). The  $R^2$ ,  $Beta$ , and  $F$  values were extracted in order to explain variance, prediction across variables and the existence of relationships between the selected variables and their significance, respectively (Table 4).

The models show that mastery can be significantly predicted in all three countries by high scores in enjoyment, intrinsic motivation, extrinsic motivation (except for Mexico), and effort (40% of variance in Costa Rica, 41% in Mexico and 35% in Spain).

Furthermore, performance-approach can be significantly predicted in all three countries by high scores in extrinsic motivation, amotivation and skill and low scores in enjoyment and effort. In the case of Mexico, it is also predicted by a high score in boredom (43% of variance in Costa Rica, 38% in Mexico and 34% in Spain).

The performance-avoidance models can be significantly predicted in all three countries by high scores in boredom, extrinsic motivation (except for Costa Rica) and amotivation and low scores in effort (43% of variance in Costa Rica, 38% in Mexico and 33% in Spain).

Finally, the social acceptance models can be significantly predicted in all three countries by a high score in extrinsic motivation and skill (except for Spain (48% of variance in Costa Rica, 45% in Mexico and 34% in Spain)).

**Table 4.** Multivariate Linear Regressive Analysis: models significantly predicting motivational climate (*PTEGQ*) according to Intrinsic sports satisfaction (*SSI*), Motivation in sports-physical practice (*SMS*) and Perception of beliefs about the causes of success in sports (*BACSSQ*).

	Costa Rica (n = 298)				Mexico (n = 137)				Spain (n = 798)			
	MAS	P-A	P-AV	S-A	MAS	P-A	P-AV	S-A	MAS	P-A	P-AV	S-A
	Beta <sup>S</sup> ign											
<b>SSI</b>												
<i>Enjoyment</i>	.20**	-.10*	-.04	-.05	.24*	-.20*	.08	.06	.10*	-.06*	-.02	-.02
<i>Boredom</i>	-.04	-.02	.18*	-.01	.06	.20*	.21*	.13	.04	.06	.09*	.00
<b>SMS</b>												
<i>Intrinsic motivation</i>	.15*	-.01	.12	.09	.21*	-.03	-.15	-.07	.10*	-.03	-.05	-.05
<i>Extrinsic motivation</i>	.16*	.16*	.09	.30**	.10	.20*	.23*	.26**	.10*	.16**	.17**	.30***
<i>Amotivation</i>	.02	.20**	.25***	.10	.04	.24*	.25**	.05	.00	.11*	.13**	.06
<b>BACSSQ</b>												
<i>Effort</i>	.19*	-.11*	-.11*	-.08	.36**	-.22*	-.21*	.09	.09*	-.12**	-.10*	-.01
<i>Skill</i>	.09	.19*	.03	.18*	-.05	.33**	.17	.30**	-.06	.13**	.03	.00
<i>Deception</i>	-.00	.10	.08	-.00	.10	.11	.14	-.09	-.00	.05	.04	.08
$R^2=.40$ $R^2=.43$ $R^2=.43$ $R^2=.48$ $R^2=.41$ $R^2=.49$ $R^2=.38$ $R^2=.45$ $R^2=.35$ $R^2=.34$ $R^2=.33$ $R^2=.34$ $F=5.63$ $F=6.60$ $F=6.61$ $F=8.94$ $F=3.01$ $F=4.56$ $F=2.40$ $F=3.66$ $F=11.12$ $F=10.28$ $F=9.07$ $F=9.91$												
MAS=Mastery, P-A=Performance-approach, P-AV=Performance-avoidance, S-A=Social acceptance												

Source: authors

## DISCUSION

As stated in Alcaraz-Ibáñez, (2017) Gallegos, Ruiz-Juan, Villareal, & Zamarripa (2019), human beings go through a series of deep changes in adolescence, which in some cases can give rise to different types of behaviours. Based on this, the analysis of an important sample of subjects from three different countries could reveal significant data.

Thus, the object of this study was to ascertain how satisfaction, motivation, and belief in success in leisure-time sport activities carried out by high school students can predict the motivational climate perceived in Physical Education in three different cultural contexts such as Costa Rica, Mexico and Spain. Variables such as motivation, intrinsic satisfaction and belief in success in leisure-time sports physical activities can predict the motivational climate in Physical Education classes.

In this study the highest scores were observed in the mastery-climate and the lowest were those obtained in performance-avoidance. These results are similar in students of the three countries studied, and thus it is safe to state that this is the overall trend in the Physical Education students analyzed (2168

adolescents) and that it is in line with Méndez-Giménez, Fernández-Río, Cecchini, & González (2013) and other studies by Ruiz-Juan et al. (2018). Furthermore, it is worth noting that the highest scores in mastery were obtained by Mexican students, whereas Spanish students obtained the lowest scores in performance-avoidance. Moreover, Costa Rican students obtained the highest scores in the four sub-scales (except for mastery), followed by Mexican and Spanish students.

In terms of intrinsic satisfaction in leisure-time sports physical activities, the enjoyment variable obtained the highest score in all three countries, Costa Rican students being slightly below Spanish and Mexican students. On the other hand, the boredom variable showed the lowest values, Spaniards being the less amotivated and bored students.

This idea is supported by other studies confirming that students felt more joy than boredom in leisure-time sports physical activities (Abralde, Gómez-López, Granero-Gallegos, & Rodríguez-Suárez, 2013). The Physical Education field also reveals the lowest scores in boredom (Méndez-Giménez et al., 2013). These data are highly relevant as the three countries analyzed here show the same trend, which shows that satisfaction in Physical Education positively predicts school satisfaction (Baena-Extremera & Granero-Gallegos, 2015).

In terms of motivation, the overall trend in all three countries is for high scores in intrinsic motivation and lower scores in demotivation, Mexican students obtaining the highest mean values and Spanish students showing the lowest amotivation values. These results are in line with recent studies showing high mean values in self-determination and lower scores in demotivation (Moreno-Murcia, Zomeño, Marín, Ruiz, & Cervelló, 2013). Lim & Wang (2009) revealed that students with high levels of intrinsic motivation are more likely to become physically active. Thus, it is safe to state that adolescents who do sports in their leisure time have a more self-determined motivation towards sports practice. We should be aware of demotivated students given that amotivation can lead to abandonment of leisure sports practice.

As to the perception of beliefs about the causes of success in sport, skill and effort were the causes most noted by students from all three countries, especially the deception variable, mainly in Costa Rican students, followed by Mexicans and Spaniards respectively. Other studies have revealed similar results (Castillo et al., 2002; Navas et al., 2008), effort and skill prevailing in young athletes above deception techniques.

Regarding the predictive analysis, the results show that performance approach and avoidance climates have a positive relationship with boredom, extrinsic motivation, introjected regulation, and identified regulation. Smith et al. (2002) obtained similar results and found relationships between the performance climate and extrinsic motivation and achievement goals. In this study, performance approach and avoidance climates also correlate with students' amotivation, in line with Conroy, Kaye & Coatsworth (2006), who also relate performance climates to demotivation, anxiety and desadaptive learning. However, in this study, the external regulation variable is only related to the

performance approach climate; there is no relation to performance avoidance, a result also found in other studies (Gutiérrez, 2014; Vélchez & Ruiz-Juan, 2016).

Both performance-oriented climates are related to deception techniques in sports and with showing ability, which is only logical as a performance approach climate aims at students showing skill levels above those of their peers, and a performance avoidance climate aims at avoiding performing at a lower level than peers (Elliot & McGregor, 2001). Effort has a negative correlation with performance climates given that adolescents see ability as something permanent and depending on one's own talent and they do not believe in effort.

It is worth noting that all students from the three countries obtained a higher perception of a mastery or learning climate in Physical Education classes in line with previous studies (Granero-Gallegos & Baena-Extremera, 2014; Soini et al., 2014). Variables such as enjoyment, intrinsic and extrinsic motivation, and effort in leisure-time sports physical activities positively predict a mastery-oriented motivational climate. Baena-Extremera et al. (2015) found that a mastery climate was related to higher levels of satisfaction and enjoyment in Physical Education classes and with higher intrinsic motivation.

Extrinsic and intrinsic motivation, showing ability (except for Spain) and deception techniques in leisure-time sports physical activities in this study predict a social acceptance motivational climate. Adolescents acquire a behaviour aiming at showing superiority in relation to peers with the object of achieving social recognition, regardless of execution results (Papaioannou et al., 2007).

A novel contribution in this study is the fact that, based on students' motivation, satisfaction and belief in success in their practice of leisure-time sports physical activities, it is possible to predict the motivational climate created by Physical Education teachers. Thus, performance-approach can be significantly predicted in all three countries by high scores in extrinsic motivation, amotivation and skill and by low scores in enjoyment and effort. In the case of Mexico, it is also predicted by a high score in boredom. Furthermore, performance-avoidance models can be significantly predicted by high scores in boredom, extrinsic motivation (except for Costa Rica), and amotivation, and by low scores in effort.

However, Bortoli et al. (2015) see a mastery climate as the most suitable for increasing motivation in students. In this study, the models show that in all three countries mastery can be significantly predicted by high scores in enjoyment, intrinsic motivation, extrinsic motivation (except for Mexico), and effort. Thus, it is worth noting the importance of satisfied and motivated students throughout this age range as it is in this period when sports abandonment is the highest, and it is a crucial life stage when it comes to building a healthy lifestyle (Nuviola, Tamayo, & Nuviola, 2012). Ewing (1981) reached the conclusion that students who abandon physical activity are more ego-oriented, whereas those who practice physical activity are oriented to social acceptance.

To conclude, the contribution in this study to the specialized literature is worth noting given that it reveals overall trends through a sample covering three

countries. Satisfaction, motivation, and belief in success in sports can predict the motivational climate in Physical Education classes by giving clues on how to organize and conduct these classes. Thus, mastery-approach climates are more suitable than performance approach and avoidance climates (Elliot & McGregor, 2001), the former achieving higher levels of intention to continue practicing leisure-time sports physical activity (Moreno-Murcia, Huéscar, & Cervelló, 2012).

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