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Masculine, feminine and neutral sports: Extracurricular sport modalities in practice

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ABSTRACT

The present work constitutes a novel approach to extracurricular sport modalities. The aim was to analyze the participation model and to determine the relevance of sex in this context. Data from 616 students, aged 15 to 17, were collected. The *questionnaire on sport lifestyle from a gender perspective* (Alvariñas-Villaverde et al., 2009) was used for assessment. The results showed that sport choice corresponds to sports traditionally associated with men or women. Nevertheless, these coexist with other neutral sports. Girls' practice was more diverse, while boys' profile was more resistant to changing classic patterns. Specific strategies are needed to make boys become more interested in typically female activities. **Key words:** SPORT PARTICIPATION; GENDER; ADOLESCENTS; MULTIPLE CORRESPONDENCE ANALYSIS.

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INTRODUCTION

Metheny's (1965) innovative work showed that sport participation was in accordance with socially accepted characteristics of femininity and masculinity. Since then, an important number of research studies focused on the differences between boys' and girls' sport participation have been conducted (Fernández-García, 2007; Gracia-Marco et al., 2010; Marques et al., 2015; Van Tuyckom et al., 2010).

Klomsten et al. (2005) noted that boys' and girls' sport choice was in most cases made based on gender stereotypes associated with sports, pointing out the objectification of the female body. The characteristics of the sports chosen by boys are related to danger, risk, violence, speed, strength, endurance, challenge and team spirit (Koivula, 2001), and even to aggressive or potentially dangerous activities in which participants may get dirty and hurt, according to Schmalz and Kerstetter (2006). On the other hand, the sports chosen by girls are defined by props, such as pompoms, or are associated with esthetic activities, such as dancing or coordinated movements (Schmalz & Kerstetter, 2006). Similarly, studies conducted in Spain showed that boys mainly play sports like soccer, whereas girls prefer swimming or aerobics/dance (Consejo Superior de Deportes, CSD, et al., 2011; Fernández-García, 2007; Gracia-Marco et al., 2010; Luengo, 2007).

A large number of studies have explained the influence of gender socialization on femininity and masculinity social constructions, which also affect the sports choice (Chalabaev et al., 2013; Rebollo-Catalán et al., 2017). Therefore, not following the established standards can become a problem for many adolescents. Participating in sport activities which are considered not appropriate entails the risk of being judged or labeled by society (Chalabaev et al., 2009; Laurin, 2013). Even sexuality may be questioned (López-Albalá, 2016). Vidiella (2007) described negative experiences by men who distanced themselves from masculine hegemony. Kleinubing et al. (2013) confirmed boys' refusal of dancing and their avoidance of that kind of movements. Likewise, Koca (2009) described escaping behavior among boys from content which was considered feminine and withdrawal from practice in masculine-profile sports among girls. Within this situation, it seems that girls participating in masculine sports are more acceptable than boys participating in feminine sports (Boyle et al., 2003; Riemer & Visio, 2003; Wiley et al., 2000).

Nonetheless, Hardin and Greer (2009), Riemer and Visio (2003) and Schmalz and Kerstetter (2006) highlighted that, in spite of the fact that there is still a clear prevalence of gender bias in the sports environment, the so-called neutral sports are more and more part of people's thinking and behavior. Sports such as track and field, tennis, volleyball or badminton are labeled as neutral, since they are considered appropriate for both sexes or because they are played by both women and men (Fontayne et al., 2001; Koivula, 2001; Schmalz & Kerstetter, 2006; Smith et al., 2007). This kind of choice varies depending on the cultural, geographical and climatic context.

In Spain, recent studies have emphasized small changes towards the breakdown of certain stereotypes among students (Alvariñas-Villaverde & Novoa, 2016; Gil-Madróna et al., 2017). Moreover, classically feminine or masculine sports coexist with neutral sports within sports practice (CSD, et al., 2011; Fernández-García, 2007; Gracia-Marco et al., 2010). Lavega et al. (2017, p. 546) stated that:

In Spain today, gender relations are being transformed. In addition to the hegemonic gender cultures that already exist, in which male and female gender roles are highly stereotyped, new cultures are emerging in which gender identities are more blurred and less subject to traditional rules in society.

These authors explained how the sports world clearly reflects these changes. On one hand, both hegemonic gender cultures exist while, on the other hand, there is a variety of emerging subcultures, where women may practice boxing or triathlon and men may practice yoga or meditation.

Information on sport habits in Galicia (one of the Spanish self-governing regions) is scarce. For this reason, the present research will focus on the study of extracurricular sport choice, with the aim to observe how participation is distributed among boys and girls in this region. Our study aims to find common behaviors that allow for the establishment of sport types. This research is not based on previous distinctions related to sex, but it intends to determine the degree of importance of sex within the context of global sports practice behavior.

METHODS

Participants

The sample for this study was composed of 616 students from nine secondary schools in Northwestern Spain (49% male and 51% female), aged 15 to 17 years old ($M = 15.95$, $SD = 0.84$).

Measurements

The *questionnaire on sport lifestyle from a gender perspective* was used as measuring tool (Alvariñas-Villaverde et al., 2009). Besides certain personal information as the year of birth or gender, the questionnaire included questions organized in three blocks: (a) sports out of school, (b) motivations and influences for sport participation, and (c) gender perception in sport.

The following variables were analyzed in the present study:

- (1) *Extracurricular sports*, which is included in block (a), called sports out of school. Participants were instructed to pick, out of a list of 31 sports, those that they played or had played outside school hours.
- (2) *Sex*, which distinguishes between males and females.

Cronbach's alpha coefficient is 0.82, indicating high internal consistency.

Procedure

Students were contacted by the Heads of physical education departments of the participating centers. The questionnaire was self-administered during tutorials. All participants and parents were thoroughly informed about the purpose and content of the study. Written informed consent was obtained from the parents or guardians prior to participation. The study was performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki. It was also approved by the Ethics Committee of the Faculty of Education and Sport Sciences, University of Vigo (Spain).

Statistical analysis

A Multiple Correspondence Analysis (MCA) was performed in order to determine which factors can explain the global behavior regarding sports practice. In this case, the column containing the sex was removed from the database. The input data had 616 rows (participants) and 31 dichotomous columns (sports). MCA can be considered as a generalization of Principal Component Analysis when the variables to be analyzed are categorical.

Due to the fact that the inclusion of variables with low frequency (sport disciplines with low participation) in a MCA may distort the results and that minority sports characterize the main factors in our study, a threshold of 2% of participants was set for a sport to be considered active (Benzécri, 1992; Greenacre, 1984; Escofier & Pagès, 2008). This threshold was reached by 23 sports, while the remaining eight sports were considered as illustrative variables. This means that a first matrix with size 616 x 23 including the active sports was used to build the MCA.

The factor scores were computed considering that the eigenvalues were sorted in descending order. The first factor had the highest eigenvalue and, therefore, the highest percentage of explained variance. The MCA results yielded some trivial factors because working with categorical variables implies some redundant information: the presence of a certain category of a qualitative variable can be computed as the absence of all the other categories. The factor scores would have an incorrect dilation and, therefore, the cosines for the rows and columns would be incorrect. Likewise, the percentage of inertia explained by non-trivial factors would be underestimated.

With the aim to quantify the true importance of each factor in the global model, the eigenvalue correction suggested by Benzécri (1979) was applied (Abdi & Valentin, 2007; Greenacre, 1993).

A maximum of q factors are obtained from an MCA with q dichotomous variables (23 sports in our case). Factors with eigenvalues below $1/q$ are trivial factors and must be removed from the solution. In our case, 11 non-trivial factors with eigenvalues above 0.043478 remained.

Once the factor scores were obtained for the 23 sports considered as active variables, the 8 illustrative variables with low frequency were projected on the factorial configuration.

Finally, once the factors that characterize sport practice were obtained, sex was included in the final phase analysis only for interpretation purposes. The aim was to check whether any of these factors was related to or could be explained by sex differences.

The FactoMineR (Husson et al., 2017) module of R free software (R Core Team, 2017) was used to conduct the MCA.

RESULTS

Table 1 contains the MCA results. The first block contains the corrected coordinates of the 23 active disciplines, sorted out by relative contribution or squared cosine of the first MCA dimension. The second block includes the coordinates and cosines for the illustrative variable sex, while the third one contains the same statistics for the 8 illustrative sport disciplines with low frequency.

The first factor contains 53.24% of the model inertia, whereas the second factor contains 20.9%.

There are nine sports with significant coordinates in the negative side of the first factor. The four sports with highest negative coordinates in factor 1 are: futsal (-0.181), body building (-0.132), soccer (-0.120) and basketball (-0.103). These four sports account for 32.7% (absolute contribution) of the first factor. Other sports with lower coordinates are track and field (-0.098), tennis (-0.084) and cycling (-0.083), which also show lower absolute and relative contributions.

Table 1. MCA corrected coordinates and contributions

Disciplines	Corrected coordinates		Squared cosines		Absolute contributions	
	F1	F2	F1	F2	F1	F2
Rhythmic and expressive activities	0.227 *	0.082 *	85.1	11.2	16.7	5.6
Rhythmic gymnastics	0.246 *	0.008	79.6	0.1	5.5	0.0
Music-based aerobic exercise	0.204 *	0.121 *	71.2	25.0	11.1	9.9
Skating	0.176 *	0.061 *	62.9	7.5	4.3	1.3
Swimming	0.061 *	-0.050 *	49.2	33.4	3.3	5.7
Walking	0.106 *	-0.136 *	35.5	57.8	5.0	20.9
Extreme sports	0.182 *	0.230 *	28.2	44.8	2.6	10.5
Hiking	0.083	-0.109 *	15.3	26.4	0.5	2.4
Horse riding	0.026	0.058 *	1.6	8.2	0.1	0.7
Others	0.006	0.000	0.2	0.0	0.0	0.0
Handball	0.003	0.007	0.1	0.6	0.0	0.0
Running	-0.015	-0.070 *	2.3	47.0	0.1	6.0
Bicycle riding	-0.022	-0.084 *	3.9	55.2	0.3	9.8
Martial arts	-0.024	0.022	4.5	3.7	0.1	0.2
Water sports	-0.038 *	0.095 *	8.9	55.0	0.3	4.1
Volleyball	-0.066 *	-0.110 *	11.7	32.5	0.4	2.6
Tennis	-0.084 *	-0.031 *	33.7	4.7	2.1	0.7
Track and field	-0.098 *	0.091 *	39.3	33.6	2.0	4.3
Cycling	-0.083 *	0.008	47.4	0.4	2.0	0.0
Strength building	-0.132 *	0.046 *	61.0	7.4	3.3	1.0
Basketball	-0.103 *	-0.001	61.8	0.0	5.7	0.0
Futsal	-0.181 *	0.064 *	81.9	10.2	11.4	3.6
Soccer	-0.120 *	0.015 *	87.3	1.4	12.4	0.5
Boy	-0.066 *	0.007	97.7	1.0		
Girl	0.063 *	-0.006	97.7	1.0		
Artistic gymnastics	0.160 *	0.076	68.2	15.4		
Pilates	0.069 *	-0.013	54.6	1.8		
Fitness gymnastics	0.031 *	-0.079 *	12.8	86.4		
Traditional sports	0.065 *	-0.161	11.3	69.8		
Badminton	0.014 *	-0.048 *	6.0	74.7		
Rugby	-0.057 *	0.002	21.1	0.0		
Hockey	-0.043 *	0.020	27.9	6.3		
Baseball	-0.057 *	-0.031	54.8	16.0		

(*) Significant activity in the MCA factor

The following six sports, characterized as typical of girls, are found on the positive side of the first dimension: rhythmic gymnastics (0.246), rhythmic and expressive activities (0.227), music-based aerobic exercise (0.204), skating (0.176), walking (0.106) and swimming (0.061). Considering their absolute contributions to the first factor, the greatest importance lies on rhythmic and expressive activities (16.7), followed by music-based aerobic exercise (11.1), rhythmic gymnastics (5.5), walking (5.0), skating (4.3) and swimming (3.3). The sum of the absolute contributions of these six sports accounts for 45.8%.

In order to quantify the possible relationship between the variable sex and the 11 factors obtained from the MCA, Pearson correlation coefficients were calculated. Figure 1 shows a high correlation (0.52) between sex and the first factor, which explains the 53.24% of the model inertia. There was only another significant correlation (in black), in this case with the third factor (0.12). The MCA shows that the coordinates of boys (-0.066) and girls (+0.063) are significant in the first factor. Sex is mainly accounted for by the first factor, as shown by the squared cosine values (97.7%). Thus, the first factor accounts for 97.7% of the inertia of the variable sex and, therefore, sex is the most important factor.

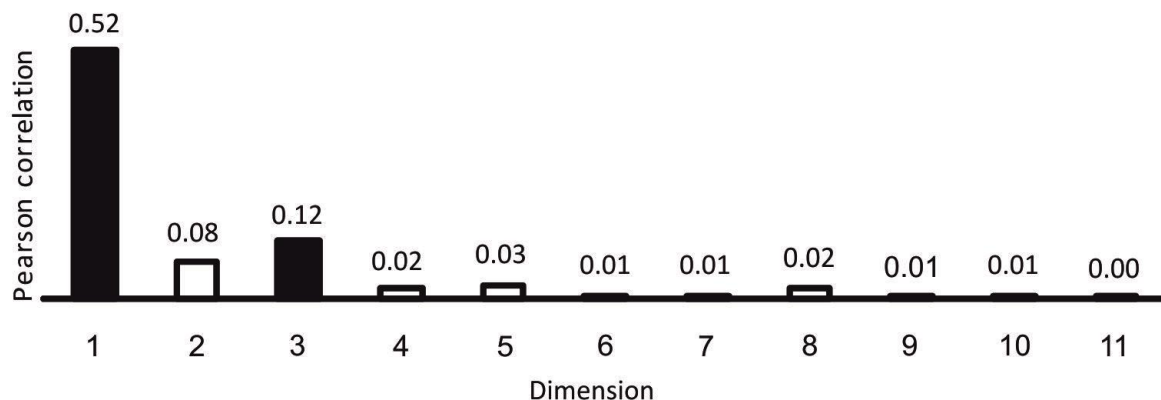


Figure 1. Pearson correlation between MCA coordinates and sex variable.

Therefore, the negative side of the first dimension has a male sex-related component, while the positive side has a female sex-related one.

Figure 2 shows the influence exerted by the variable sex, with clear differentiation between sports chosen by girls or boys, along with the presence of neutral sports. In a more detailed analysis of the results, higher dispersion along the first axis is observed among girls ($SD = 0.254$) than among boys ($SD = 0.216$), concluding that girls' sports practice is more diverse than boys'.

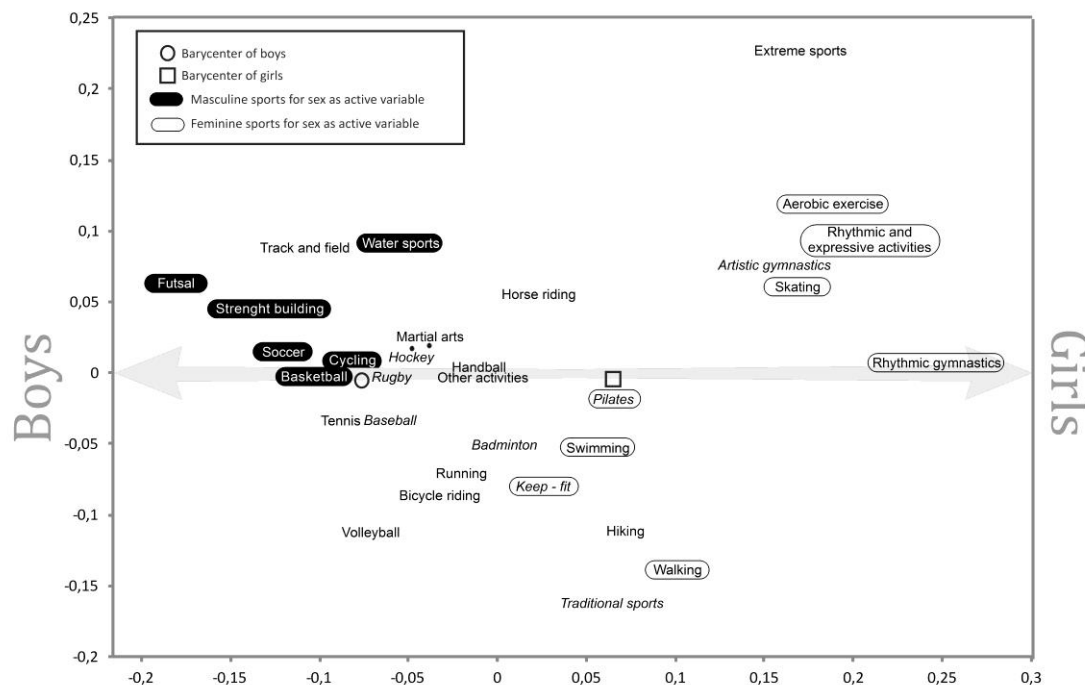


Figure 2. First MCA factorial plan. Active, illustrative sports and sex.

DISCUSSION AND CONCLUSIONS

The present work aimed to analyze the extracurricular sport participation model among Galician students and to determine the importance of the variable sex in this context. After applying MCA, we can say not only that sex is a decisive factor in the participation model, but also the most defining one when it comes to sports.

The analysis enabled us to observe the existence of sports which are mostly practiced by girls, boys or both (neutral sports). Sports chosen by girls were similar to those from other Spanish studies (Fernández-García, 2007; Gracia-Marco et al., 2010). They were activities related to rhythm, expression and dancing. Swimming also seemed to be a discipline more associated with girls (Fernández-García, 2007; Gracia-Marco et al., 2010; Seabra et al., 2007; Smith et al., 2007). The same happened with walking (Fernández-García, 2007; West et al., 2002). By contrast, our results differed from a number of studies conducted in Portugal, which clearly showed that football was one of the most practiced sports among girls (Marques et al., 2015; Seabra et al., 2007). Likewise, sports practiced by girls in other European contexts did not feature so noticeable rhythmic-expressive characteristics (Smith et al., 2007; West et al., 2002).

On the other hand, in agreement with previous literature (CSD et al., 2011; Klomstem et al., 2004; Luengo, 2007; Marques et al., 2015; Seabra et al., 2007; West et al., 2002), boys mostly chose traditionally male sports. Data showed men's predilection for team sports, which involve collaboration and opposition. On the contrary, girls preferred individual activities which entail less contact. This was also in line with previous studies (CSD et al., 2011; Gracia-Marco et al., 2010; Klomstem et al., 2004; Smith et al., 2007).

Several studies have revealed differences in sport choice depending on sex. They have been related to the influence of gender stereotypes present in every society (Chalabaev et al., 2013; Klomsten et al., 2004; López-Albalá, 2016) and to the fear of stigmas in sport (Chalabaev et al., 2009; Laurin, 2013; Schmalz & Kerstetter, 2006). In this regard, the barriers encountered by girls when practicing sport and physical activity

have constituted a major concern (Chalabaev et al., 2013; Koca, 2009; Petracovski et al., 2011; Sánchez-Gómez et al., 1997).

Nonetheless, studies about masculinity in sport have been conducted in the last years (Chimot & Louveau, 2010; Silva et al., 2011; Vidiella, 2007; Vidiella et al., 2010). They revealed a different reality: sport and physical activity may turn into a great enemy for many boys and young men if they do not follow the standards set by the masculine hegemony. From this point of view, men are more vulnerable than women, what has been confirmed by studies such as the one conducted by Schmalz et al. (2008). This explains the higher participation of women in activities considered masculine (Blández et al., 2007), since social pressure is stronger for men. Besides, in studies such as the one carried out by Fontayne et al. (2001), male and female participants chose appropriate sports and rejected sports that were incongruent with their identity, whereas androgynous and undifferentiated participants were more engaged in neutral sports.

The results obtained confirmed the previous reasoning, since girls were found to increasingly practice sports that are typically considered masculine, while this did not happen with boys and typically feminine sports. Boys showed higher resistance to individual and rhythmic and expressive activities. Girls' practice was more diverse and they were the main contributors to the existence of neutral sports. Schmalz et al. (2008) talked about a "social phenomenon" when they referred to the fact that girls can more easily adopt masculine behaviors.

Anyway, according to Koivula (2001), the labeling of a sport as more appropriate for one sex or the other may change, yet this is based on specific cultural and historical conditions. That is why sports like soccer may be chosen by female participants (Fasting, 2003; Seabra et al., 2007) or not, depending on the geographical area involved. Furthermore, soccer or aerobics were considered neutral sports in some research studies (Schmalz & Kerstetter, 2006), while in others, such as ours, they were classified as typically male and female sports, respectively (Gracia-Marco et al., 2010; Klomsten et al., 2005).

Cultural differences also arise when comparing our results with those from other studies regarding sport typology. For example, the social importance of sports like field hockey or baseball is minimal in Spain and it is not comparable with other countries in which these disciplines are national sports. The same happens with netball for girls or cricket for boys (West et al., 2002; Smith et al., 2007). Nevertheless, water sports were the sixth most important male sport in our study, what is directly related to our geographical conditions.

The adolescents under study are presented as a group that needs to move forward, break stereotypes and fight on many fronts to overcome psychological and social barriers. Some studies suggested that the types of sport and physical activity that school provides are a crucial factor to understand the differences in participation and highlighted the importance of diversification and a wide extracurricular activity offer (Smith et al., 2007). Other studies revealed significant gender differences in sport participation in some countries, such as Spain. They concluded that different policy responses will be required in the different European member states to achieve more female participation in sports (Van Tuyckom et al., 2010). Specific strategies may be added to encourage boys to practice typically female activities, showing all possible expressions of male identity.

A longitudinal analysis on the evolution of sports categorized as feminine, masculine or neutral in a specific group could be performed in future studies and the factors which influence decision-making could be determined. Moreover, it would be interesting to study other influencing factors regarding them as illustrative variables, in order to determine how they contribute to the explanation of the sports choice model.

It is critical to identify inequality factors and to set guidelines for intervention and models to enhance gender equity. Efforts should start by designing comprehensive plans in which professionals from different fields (such as education, culture, health or politics) are involved.

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