Validation of the French Version of the Scale for Measuring Athletic Identity among French Student Athletes

Youssouf Ballah Youssouf[a,b*] & **Anne-Marie Lebrun[b]**
[a]Faculté des Sciences, Université de Djibouti, République de Djibouti
[b]Sport Faculty, University of Burgundy-Université Bourgogne Franche-Comté (UBFC), Dijon, France

Abstract

The main objective of this article is to examine the validity of a French version of the Athletic Identity Measurement Scale (AIMS) with a sample of French varsity athletes according to different characteristics such as age, gender and types of sports activities practiced. To this end, 445 sports students answered a questionnaire measuring the degree of Likert-type sports identity on a 7-point scale. The sample included 272 men and 173 women with an average age of 21 years. Validation of the factor structure and internal consistency was tested by performing confirmatory factor analyzes and calculating Cronbach's alpha coefficient on the four different models most proposed in the literature. The results related to the exploratory and confirmatory factor analysis showed that the four AIMS models tested in this study are not appropriate for the French context. On the other hand, they made it possible to identify a measurement model composed of two factors; identities and exclusivity. For the two factors, no significant difference appeared between the subgroups of age, sex and the types of sports activities practiced. Therefore, the two-factor model identified in this research stands out from the already existing models. To further test its robustness, it would therefore be desirable to test it in socio-cultural contexts close to that of France.

Key words: athletic identity, French varsity athletes, scale development

Introduction

To reconcile sport and studies, there are many accessible and economical solutions that allow students to practice sport at universities in France. Students who wish to practice sport are taken care of by a structure called the University Department of Physical and Sports Activities (SUAPS). This structure gives many students

the possibility of devoting themselves to at least one sporting discipline half a day per week (Lacassagne et al., 2006). The SUAPS makes it a local service which has several missions within the universities. It allows, first of all, to identify the needs of all students (including disabled students) in terms of sport, then to encourage them to practice sport. Thanks to this platform, students are able to develop knowledge and prerequisites in the field of sport. Ultimately, it allows even to develop a training project. Furthermore, the SUAPS can also offer targeted sports education, in line

with the profile and disciplinary field of each student.

In sum, the SUAPS offers many sports disciplines accessible to all and that whatever the level of each sports practitioner. For the most athletic students, it is possible to take part in sports competitions organized by the French university sports federation. Others can also join sports associations or sports clubs in order to take part in much more advanced training.

Nevertheless, reconciling high-level training and studies is in itself a permanent challenge for varsity athletes. Only those endowed of one big determination will manage to do it. It should be noted that unlike the United States where sporting success is associated with success in school, in France just as in certain countries of Southern Europe, the sporting elites must sometimes make a choice between sports and studies (Lupo et al., 2017). The European sport-study model seems, until this day, ill-suited for those who wish to chase the two careers together. This, in no way calls into the question of the overall success of high-level French sport. On the contrary, there is a craze for the sports massification of the French population (Mignon, 2015). At this title, we estimate one out of two French people regularly practice sport activity and 66% of adolescents over the age of 15 indulge in at least physical activity at times in a week (France Strategy, 2018). For the most modest part of 6-18, the Pass' Sport (50 euros) makes it possible to finance the sports license or 5.4 million children in a sports association (emilemagazine.fr accessed 10/20/22). It is estimated that the French people practice several types of sports and the most advanced reasons for practicing sports are the search for personal balance, the affirmation of sociability and health capital (Mignon, 2015). When an athlete wins a title, for example, he is immediately appreciated and loved by the general public (Ballah, 2018). It will be considered as a nobody model to which we can identify themselves. Varsity athletes, for their part, are involved in a universe of varied networks; studies, sports, etc.

Given such an environment conducive to sports practice, it is quite obvious that a certain number of students could consider themselves as much sportsmen as students. This possible way of self-identification is partly due to the way others look at them, but also to the various supports they could benefit from. There is therefore a component of the identity specific to sport called in other words "sports identity". Brewer et al. (1993) define it as follows: "the degree of identification of an individual with the role of sportsman".

For Wiechman & Williams (1997), athletic identity is a result of the support of family, friends, teachers and the influence of the media on an athlete. The construction of athletic identity therefore takes place in the flow of direct manifestations of "social support" of which the athlete himself is only a simple witness. This is at the supra-individual level. The consequence of this specific context for an athlete is a feeling of primacy of the role of sportsman (Stryker & Burke, 2000). Cieslak (2004) supports this assumption by specifying that individuals define their identities through their social life. For Stryker & Burke (2000), athletic identity refers, among other things, to experiences that relate to athletic interactions. Other authors posit that athletic identity further examines all psychological, social and behavioral dimensions of an individual. Understanding athletic identity means understanding the athlete (Hagiwara & Isogai, 2014) in all its psychological and emotional aspects (Lamont-Mills & Christensen, 2006) because an individual's athletic identity affects their other identities (Tunçkol, 2015). It has been found that an inflated athletic identity can have short-term adverse consequences such as overtraining (Brewer et al., 1993; Winsley & Matos, 2011), burnout (Gustafsson et al., 2018), risk-taking for health (Liniger et al., 2017); or long-term, such as loss of identity or loneliness (Alfermann, 2000; Brown & Potrac, 2009; Sanders & Stevinson, 2017).

The contributions of this research are therefore multiple. They allow to better understand the capacity adaptation or non-adaptation of athletes in non - sporting environments (Martin et al., 1995). For the

sports context, they allow for example to anticipate behavior unsportsmanlike such as the use of doping, according to a study by Hale & Waalkes (1994), athletes having a high score in AIMS are those who do the most. Also, this study contributes to preventing possible depression in athletes suffering of one wound or who are at the end of their career (Brewer et al., 1993; Martin et al., 1995). This research attempts to show how sporting identity affects both daily life and athletic performance of athletes.

For a pragmatic contribution, Brewer et al. (1990, 1993) have developed an unpublished measuring instrument on sports identity called AIMS (Athletic Identity Measurement Scale). AIMS is a tool strategy that allows us to understand the behavior of a sporting subject. It measures especially the involvement degree of the subject in the role of sportsman. Thanks to this tool, it would be possible for example to predict the moments most at risk for a varsity athlete to abandon his university studies. This measuring instrument, made up of 10 items, takes into account several situations that mark the life of an athlete. AIMS is designed from the ground up, on the multidimensional model of self-concept. It examines all the psychological, social and behavioral dimensions of an individual. During the experimentation, the structure and psychometric qualities of AIMS have only revealed one factor in previous studies (Laurencelle & André, 2011). However, the design of this psychometric tool is made for American athletes and in a specific context of the United States. Since then, there have been a few studies on the validation and improvement of AIMS in different contexts (Babić et al., 2015; Hagiwara, 2020; Li & Andersen, 2008; Peiró-Velert et al., 2016; Silva et al., 2016; Sindik et al., 2017; Tunçkol, 2015; Zhang & Shao, 2021). Today, there are several translations and models of AIMS around the world. It is to meet the different cultural needs of each country that many academic studies on AIMS have put forward adjusted and adapted versions of AIMS, inspired by the original American version. In this sense, it is advocated that

intercultural adaptation is a necessary process when using instruments that were originally designed in other contexts, especially when it comes to psychological aspects and the cultural diversity of human beings (Silva et al., 2016). To test the validity of the original version of the AIMS, this research includes contextual variables such as age, gender and types of sports activities practiced. In previous research, Brewer et al., (1993) established that athletic identity is negatively correlated with age due to the maturation of athletic students while other studies indicate a positive correlation until athletic retirement age (Houle et al., 2010). "Sex" could also be an interesting variable for athletic identity. Specifically, the results of some research have established that athletic identity is stronger in men than in women (Brewer et al., 1993; Tasiemski et al., 2013; Van Raalte & Cook, 1991; Wiechman & Williams, 1997) while at the same time other studies conclude that gender hardly affects athletic identity (Fraser et al., 2008; Groff & Zabriskie, 2006; Hoiness et al., 2008). In short, some researchers postulate that any difference in the perception of the athletic role between men and women would be essentially cultural and not biological (Ozkan & Lajunen, 2005; Williams & Best, 1990).

Although research on the validation of AIMS is done internationally, there is little that investigates the generalizability of items and the factor structure of AIMS in non-English-speaking cultures (Li & Anderson, 2008). And none of them have been carried out to our knowledge in a French context. For this reason, it is difficult from the outset to predict the model that could correspond to our sample and given that previous studies recommend performing the AIMS validation process in order to verify the stability of the construct with different populations (Silva et al., 2020), this study therefore proposes to endorse an AIMS measurement scale appropriate to French athletic students. Likewise, this research aims to determine whether athletic identity is correlated with age, gender and the types of activities practiced.

Methods

Attendees

The participants in this study were 445 (173 women and 272 men) aged 16 to 38 years (with an average age of 21 years) who are essentially athletic students enrolled in sports clubs and/or in sports science faculties in several French regions. The results of the additional descriptive statistics are presented in Table 1.

Measurement

This research is a continuation of our previous research (i.e., doctoral thesis) and focuses exclusively on the validity of the sports identity scale. To our knowledge, there has been no AIMS test with a French sample. To undertake this research, we used the original version of the athletic identity scale translated into French by Laurencelle & André (2011). Nevertheless, before distributing the AIMS questionnaire to our research participants, we first had it tested with 15 athletic students from the University of Burgundy as well as with 10 young researchers and doctoral students from our research laboratory, in order to identify any shortcomings or imperfections. At the end of this test, the quality of the French version of the questionnaire was judged to be appropriate to be administered to a larger study population. In line with the original AIMS model, respondents should indicate their level of agreement ranging from 1 (totally disagree) to 7 (totally agree) for the 10 statements in the questionnaire. Finally, each participant should provide additional information including age, gender or sports activities practiced.

Ethical approval and informed consent were obtained from different universities prior to data collection. For athletic students who are part of sports clubs, we contacted their managers to explain the purpose of our research and we asked them for the necessary authorizations.

Research Procedure

The survey lasted several months during the year 2017 to 2018. The responses collected were processed in such a way as to guarantee the anonymity of the participants who were informed beforehand on the purpose of the survey. As for the distribution, we have distributed the questionnaires directly to some of our participants on one hand and on the other hand, to widen the range of our sample, we had recourse to an internet platform in which the questionnaire was deposited in electronic format. Participants were contacted by email to receive the link where to complete the questionnaire. In total, more than 550 questionnaires were returned and after editing due to missing data among other things, 445 questionnaires were used.

Data Analysis

The primary goal of this research is to test the

Table 1. Demographic characteristics of the French varsity athletes

Variables		N	%
Participants		445	100
Gender	Female	173	39
	Male	272	61
Age	≤ 21 years	374	84
	≥ 22 years	71	16
Type of sport	Athletic	282	63
	Football	163	37

Athletic Identity Measurement Scale or AIMS as it has been used in previous work, on a French sample. That said, we tested several identified models of AIMS on French athletic students, namely the 1-factor model with 10 items (Brewer et al., 1990), 3-factor model with 7 items (Brewer & Cornelius, 2001), 3 factors with 9 items (Brewer et al., 1993) and finally 4 factors with 9 items (Martin et al., 1994). To judge the quality of each model, an exploratory factor analysis was first performed under SPSS 21. As an extraction method, we chose principal component analysis and then Varimax rotation with Kaiser normalization. The purpose of this analysis step was to explore a better model of AIMS that would fit our context. To do this, each model was treated separately. For the internal structure to be validated, a factor must have an Eigen value > 1 and each item must have a coefficient > 0.5 (Hair et al., 2006). As for internal consistency, Cronbach's alpha (1951) was calculated to check whether all items of the same factor are correlated, considering that alpha values between 0.60 and 0.7 are acceptable and values between 0, 7 and 0.8 are good (Carricano & Poujol, 2008).

Secondly, t-tests were used to compare possible differences in the latent dimensions of the questionnaire according to age, sex and type of sport practiced.

To validate the psychometric quality of the factor structure, a confirmatory factor analysis with structural equation modeling procedures (i.e., Maximum Likelihood) is performed using AMOS version 26 software. The procedural review covers a number of the fit indices. The Comparative Fit Index (CFI), Goodness-of-Fit Index (GFI), Normed Fit Index (NFI), Tucker-Lewis Index (TLI) and Adjusted Goodness-of-fit Index (AGFI) all of which must exceed the fit threshold of 0.90 for the model to have sufficient evidence of adequate fit (Bentler, 1992). The RootMean Square Error of Approximation (RMSEA), the least sensitive index to sample size, was also measured, which is to be a value of less than 0.1 (Oshio, 2008).

Results

The Athletic Identity Scale (AIMS) is measured from 10 items. The pre-test phase shows that the Bartlett test (Chi^2 = 1587.092; p<0.000) and the KMO test (KMO = 0.868) are satisfactory and allow factor analysis.

The results obtained from French athletes show that the original single-factor AIMS model (Brewer et al., 1993) as well as the three other preexisting multifactorial AIMS models (Brewer et al., 1993;

Table 2. Component matrix rotation

	Items	Components	
		1	2
1	I consider myself an athlete.	0.872	
2	I have many goals related to sports.	0.799	
3	Most of my friends are athletes.	0.505	
4	Sport is the most important part of my life.		0.754
5	I spend more time thinking about sports than anything else.		0.764
6	I need to participate in sport to feel good about myself.	0.621	
7	Other people see me mainly as an athlete.	0.673	
8	I feel bad about myself when I do poorly in sport.		0.508
9	Sport is the only important thing in my life.		0.833
10	I would be very depressed if I were injured and could not compete in sport.		

* As an extraction method we used the principal component analysis and then we chose the Varimax rotation method with Kaiser normalization.

Brewer & Cornelius, 2001; Martin et al., 1994) were tested in turn and none of them could satisfy the conditions required for validation (i.e., internal consistency, Eigen Value, AVE) to this research. This is why they have all been deemed unsuitable for the French context. On the other hand, SPSS 21 (via the exploratory factor analysis Varimax) offered us a two-factor solution (see Table 2) whose reliability was demonstrated by means of Cronbach's alphas and therefore this two-factor model is the most adapted for the French sample (with a total variance explained = 56.221%).

Preliminary results (via exploratory factor analysis) showed that the French version of the "AIMS" athletic identity measurement scale is neither uni-factorial nor multi-factorial but rather bi-factorial. The items are distributed over the two factors, namely "Identities" and "Exclusivity" and all have acceptable alpha coefficients

(Cronbach, 1951) (Carricano & Poujol, 2008) of 0.788 and 0.762 respectively. Of the 10 items proposed in the questionnaire, items 1, 2, 3, 6 and 7 are loaded on Factor 1 "Identities" and items 4, 5, 8 and 9 are loaded on Factor 2 "Exclusivy". However, item 10 was deleted because the acceptability threshold was too low (i.e., below 0.5).

Table 3 presents the relationships between the variables that were detected using the Pearson correlation coefficient (r). The statistical significance level was set to .05. Processing was done using SPSS 21. The result of its relationships indicates that the correlation coefficient between the two factors (Identities and Exclusivity) is not significant (see Table 3).

Table 4 presents the results of the t-tests (for the independent samples) between the two age groups ($\leq$ 21 vs $\geq$ 22 years), between the two sex groups (male vs female) and between the two types of sport practiced

Table 3. Correlation coefficients between the two AIMS factors

		Identities	Exclusivity
Identities	Pearson correlation	1	.000
	Sig. (bilateral)		1.000
	N	445	445
Exclusivity	Pearson correlation	.000	1.000
	Sig. (bilateral)	1.000	
	N	445	445

* Correlation is significant at the 0.05 level (2-tailed); ** Correlation is significant at the 0.01 level (2-tailed)

Table 4. Comparisons of social variables for the two retained factors

Variables		Factor 1 (Identities)			Factor 2 (Exclusivity)		
		M	SD	P	M	SD	P
Age	$\leq$ 21 yrs (n=374)	0.016	0.98	0.629	0.021	1	0.48
	$\geq$ 22 yrs (n=71)	-0.089	1.07		-0.11	0.972	
Gender	Male (n= 272)	0.11	1.02	0.63	-0.041	1.01	0.433
	Female (n=173)	-0.018	0.96		0.065	0.972	
Type of sport	Footballers (n=163)	-0.04	1.01	0.885	0.1	0.996	0.945
	Athletics (n=282)	0.023	0.991		-0.055	0.999	

Table 5. Goodness-of-fit indices for the AIMS model

	χ^2	$\chi^2/$ df	AGFI	GFI	CFI	NFI	TLI	RMSEA
2-factor model (9 items)	112.06	4.3	0.912	0.949	0.937	0.92	0.912	0.086

(footballers vs athletes) for each of the two factors retained. The results of the t tests show that the differences between factor 1 (Identities) and factor 2 (exclusivity) are not statistically different for all the control variables.

Maximum likelihood structural equation modeling procedures were used to perform confirmatory factor analysis. In general, the indices of the confirmatory factor analyzes were deemed satisfactory (see Table 5) with respect to the cut-off criteria (AGFI = 0.912; GFI = 0.949; CFI = 0.937; NFI = 0.92; TLI = 0.912; RMSEA = 0.086).

Discussion

The results of the preliminary analyzes (Exploratory Factor Analysis) showed that the original AIMS model as well as the three other models tested in this study did not reach the required levels (e.g., alpha and eigenvalue) to validate their factorial structures. This indicates that the explored AIMS models are not adapted to the French sample. In this sense, Li & Andersen (2008) indicated that the original AIMS model is not suitable for the non-English speaking context.

The Identity Scale (AIMS) that we tested in this research was originally designed by Brewer et al. (1990) for the United States context. However, the context of American university sport is very different from that of French university sport. The American model highlights almost compulsory aspect of sport in the same way as studies, while the French sport model refers to the rather hedonistic dimension. Obviously, this socio-cultural difference in the sport/university relationship constitutes a limit as to the reproducibility of the original AIMS model. The "political" orientations of the sport/university relationship and the sociocultural models of the United States and France were somewhat expressed in the final results of our research. That being said, the results of our research have brought out a new factorial model (i.e., bi-factorial) because it is different from other models which were already approved. This bi-factorial model, grouping 9 items showed a validity and a reliability of construction at the level of the factorial structure during the exploratory factorial analysis as well as during the confirmatory analyses. The items of the first factor deal with both the theme of the importance of belonging to a group and the feeling of self-esteem. They are therefore united under the name of "Identities" (in the plural because it concerns personal identity and social identity). On the other hand, the items of factor 2 deal with the theme of consecration and the degree of involvement in sport. The factor that groups it is called "Exclusivity".

No statistically significant correlation was found between the dimensions of "identities" and "exclusivity" among French athlete student. This lack of correlation between the "identities" factor and the "exclusivity" factor could be explained in terms of different motivations between those who identify as sportsmen because of personal goals and/or because of external influences, and those who identify exclusively by the role of sportsman. In other words, for the first group, sport is not an end in itself. Sport would be part of the fun. While for the second group, sport takes precedence over other objectives, including studies.

The t-tests applied to the two latent factors (Identities & Exclusivity) of French varsity athletes showed no effect related to age, sex and type of sport practiced. This undoubtedly shows the homogeneity of the profile of all the participants, apart from the social control
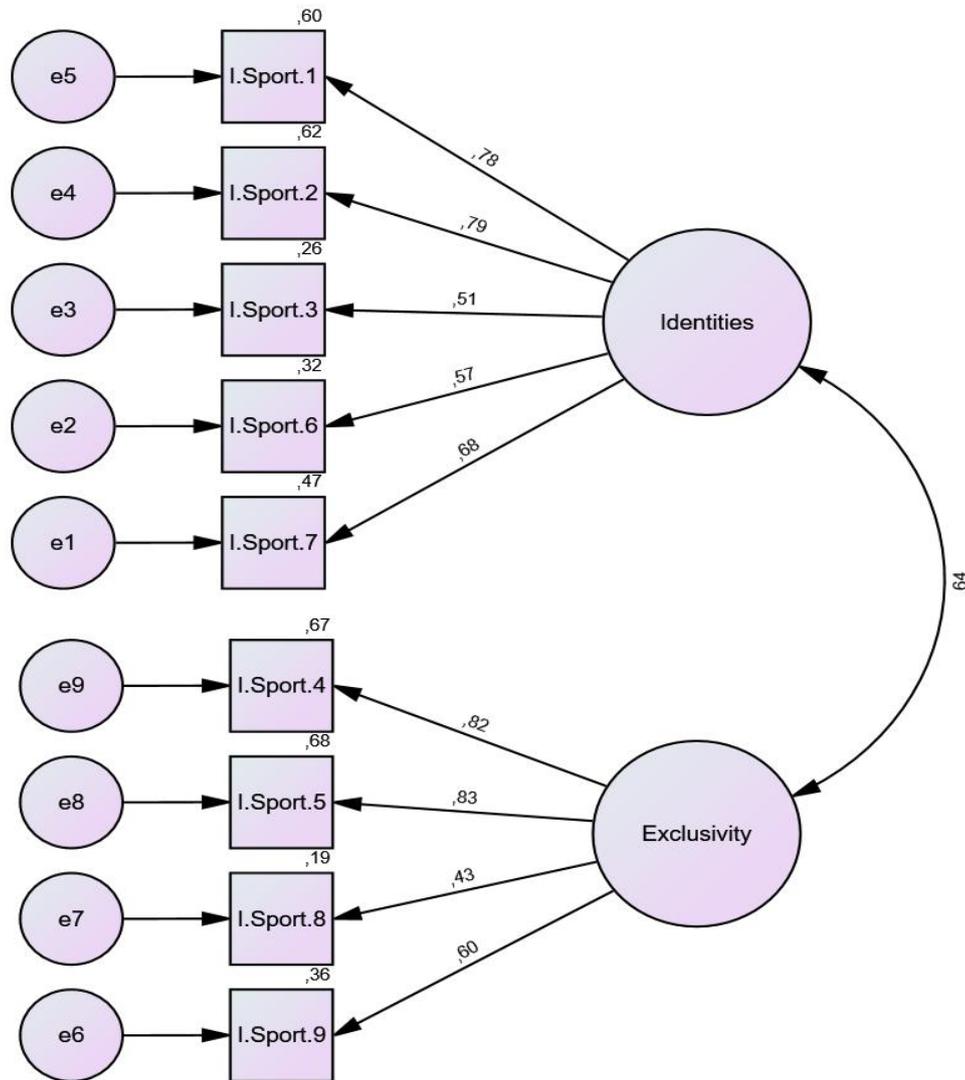
Figure 1. Pathdiagram of confirmatory factor analytic model

characteristics.

The standardized factor loads obtained by the maximum likelihood method in the confirmatory analysis are presented in Figure 1. The indicators of the items measuring the latent factors are all strong, ranging from 0.43 to 0.83, i.e., with an average of 0.66.

This study includes effectively some limits. First, it should be noted that this study is limited to athletes practicing football and athletics. It is desirable in the future to deepen this research in involving athletes practicing other sports than football and athletics. Then,

we see that this research addresses only for varsity athletes. At this effect, it would be desirable in future studies to expand the study population to non-university athletes or the former sportsmen. Nonetheless, the results obtained in this study provide important information on the sporting identity in French context and therefore they sketch a model unreleased from AIMS.

Conclusion

The results obtained in this study showed that the original AIMS instrument cannot be duplicated in the French context. Similarly, the three other multidimensional models tested in this article did not show robustness in terms of their psychometric properties. On the other hand, we identified an unpublished two-factor model comprising 9 items with satisfactory psychometric qualities. Other research on the validation of the identity scale carried out in non-English-speaking contexts (e.g., Brazil & Italy) has also reached the same conclusions as our study; i.e., a two-factor structure. With regard to the distribution of items, we found, except for one item, the same items and the same number of items as those obtained in the work of Lupo et al. (2017) with the Italian sample.

In addition, the results provided by the different comparisons confirmed that none of the three social characteristics (age, gender and sport practiced) had an impact on the factor structure of the AIMS. These data suggest that athletic identity is constructed above all at the supra-individual and cultural level, and this seems to be the case for the French sample.

And by way of perspective, we suggest that the bi-factorial model of AIMS identified in this study be tested in other European countries with similarities in terms of university sports policy in order to adopt a European model of AIMS.

Acknowledgements

References

Alfermann, D. (2000). *Causes and consequences of sports career termination. Career transitions in sport: International perspective* (pp. 45-58). Fitness Information Technology.

Babić, V., Šarac, J., Missoni, S., & Sindik, J. (2015). Athletic engagement and athletic identity in top Croatian sprint runners. *Collegium Anthropologicum, 39(3)*, 521-528.

Ballah Youssouf, Y. (2018). *Étude comparée de la représentation sociale des marques de sport chez les sportifs français et djiboutiens: Application au cas des footballeurs et athlètes* (Doctoral dissertation, Bourgogne Franche-Comté).

Bentler, P. M. (1992). EQS: Structural equations program manual, Los Angeles: BMDP Statistical Software, Inc.

Brewer, B. W., Boin, P. D., & Petitpas, A. J. (1993a). *Dimensions of Athletic Identity*. Paper presented at the American Psychological Association Annual conference, Toronto, Ontario, Canada.

Brewer, B. W., & Cornelius, A. E. (2001). Norms and factorial invariance of the Athletic Identity Measurement Scale. *Academic Athletic Journal*, **15(2)**, 103-113.

Brewer, B. W., Van Raalte, J. L., & Linder, D. E. (1990). *Development and preliminary validation of the athletic identity measurement scale*. In North American Society of Sport and Physical Activity Conference.

Brewer, B. W., Van Raalte, J. L., & Linder, D. E. (1993). Athletic identity: Hercules' muscles or Achilles heel? *International Journal of Sport Psychology*.

Brown, G., & Potrac, P. (2009). 'You've not made the grade, his': De-selection and identity disruption in elite level youth football. *Soccer & Society*, **10(2)**, 143-159.

Carricano, M., & Poujol, F. (2008). *Analyse de données avec SPSS*. Paris: Pearson Education, 202.

Cieslak, T. J. (2004). *Describing and measuring the athletic identity construct: Scale development and validation*. The Ohio State University.

France Stratégie. (2018). *Activité physique et pratique*

sportive pour toutes et tous.

Fraser, L., Fogarty, G. J., & Albion, M. J. (2008). *Is there a basis for the notion of athletic identity?* In Proceedings of the 43rd Australian Psychological Society Annual Conference: Psychology Leading Change (pp. 164-168). Australian Psychological Society.

Groff, D. G., & Zabriskie, R. B. (2006). An exploratory study of athletic identity among elite alpine skiers with physical disabilities: Issues of measurement and design. *Journal of Sport Behavior*, **29(2)**, 126.

Gustafsson, H., Martinent, G., Isoard-Gautheur, S., Hassmén, P., & Guillet-Descas, E. (2018). Performance based self-esteem and athlete-identity in athlete burnout: A person-centered approach. *Psychology of Sport and Exercise*, **38**, 56-60.

Hagiwara, G. (2020). *Validity and reliability evaluation of the multidimensional Japanese athletic identity measurement scale.*

Hagiwara, G., & Isogai, H. (2014). Examining the commitment for competitive sports: development of Japanese version of sports commitment scale. *Japanese Journal of Sport Psychology*, **41(2)**, 131-142.

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). Multivariate data analysis (6th ed.). *Pearson Prentice Hall. New Jersey. humans: Critique and reformulation. Journal of Abnormal Psychology*, **87**, 49-74.

Hale, B. D., & Waalkes, D. (1994). *Athletic identity, gender; self-esteem, academic importance, and drug use: Ahrther validation of the AIMS.* Paper presented at the North American Society for the Psychology of Sport and Physical Activity annual conference, Clearwater Beach, FL.

Hoiness, A. R., Weathington, B. L., & Cotrell, A. L. (2008). Perceptions of female athletes based on observer characteristics. *Athletic Insight: The Online Journal of Sport Psychology*, **10(1)**.

Houle, J. L., Brewer, B. W., & Kluck, A. S. (2010). Developmental trends in athletic identity: A two-part retrospective study. *Journal of Sport Behavior*, **33(2)**, 146-159.

Lacassagne, M. F., Pizzio, L., & Jebrane, A. (2006). La représentation sociale du sport: Vision d'étudiants sportifs et non-sportifs. *Science & Motricité*, **2006(2)**, 117-134.

Lamont-Mills, A., & Christensen, S. A. (2006). Athletic identity and its relationship to sport participation levels. *Journal of Science and Medicine in Sport*, **9(6)**, 472-478.

Laurencelle, L., & André, N. (2011). *Questionnaires psychologiques pour l'activité physique, le sport et l'exercice.* PUQ.

Li, H. Y., & Andersen, M. B. (2008). Athletic identity in China: Examining the AIMS in a Hong Kong sample. *International Journal of Sport and Exercise Psychology*, **6(2)**, 176-188.

Lininger, M. R., Wayment, H. A., Huffman, A. H., Craig, D. I., & Irving, L. H. (2017). An exploratory study on concussion-reporting behaviors from collegiate student athletes' perspectives. *Athletic Training & Sports Health Care*, **9(2)**, 71-80.

Lupo, C., Mosso, CO, Guidotti, F., Cugliari, G., Pizzigalli, L., & Rainoldi, A. (2017). The Italian adapted version of the Baller identity measurement scale to evaluate the varsity athletes' identity in relation to gender, age, type of sport, and competition level. *PloSone*, **12(1)**, e0169278.

Martin, J. J., Mushett, C. A., & Eklund, R. C. (1994). Factor structure of the athletic identity measurement scale with adolescent swimmers with disabilities. *Brazilian International Journal of Adapted Physical Education*, **1**, 87-100.

Martin, J. J., Mushett, C. A., & Smith, K. L. (1995). Athletic identity and sport orientation of adolescent swimmers with disabilities. *Adapted Physical Activity Quarterly*, **12(2)**, 113-123.

Mignon, P. (2015). Point de repère-La pratique sportive en France: Évolutions, structuration et nouvelles tendances. *Informations Sociales*, **187(1)**, 10-13.

Oshio, S. (2008). *First analysis of covariance structure:*

Pass analysis with Amos. Tokyo: Tokyotosho.

Özkan, T., & Lajunen, T. (2005). Masculinity, femininity, and the Bem sex role inventory in Turkey. *Sex Roles*, **52(1)**, 103-110.

Peiró-Velert, C., Valencia-Peris, A., Fos -Ros, V., & Devís-Devís, J. (2016). Sporting identity in teenage girls spanish : Propiedades psicométricas of the version in español de la scala Athletic Identity Measurement Scale-E. *Revista Latino Americana de Psicología* , **48 (1)**, 8-17.

Sanders, G., & Stevinson, C. (2017). Associations between retirement reasons, chronic pain, athletic identity, and depressive symptoms among former professional footballers. *European Journal of Sports Science*, **17(10)**, 1311-1318.

Silva, W. R. D., Ferrari, E. P., Medeiros, T. E., Freitas, K. T. D. D., Tkac, C. M., & Cardoso, F. L. (2016). "Athletic identity measurement scale": Translation, adaptation and validation for Brazil. *Motriz : Revista de Educação Fisica*, **22**, 42-47.

Silva, W. R. D., Lisboa, T., Folle, A., Melo, G. F., & Cardoso, F. L. (2020). Athlete's role identity: an integrative review of measurement instruments. *Revista Brasileira de Medicina do Esporte*, **26**, 63-69.

Sindik, J., Furjan-Mandic, G., Zenic, N., Zovko, I. Č., Stankovic, V., Savic, Z., ... & Kondrič , M. (2017). Comparison of psychological skills, athlete's identity, and habits of physical exercise of students of faculties of sport in four Balkan countries. *Montenegrin Journal of Sports Science and Medicine*, **6(1)**, 13.

Stryker, S., & Burke, PJ (2000). The past, present, and future of an identity theory. *Social Psychology Quarterly*, 284-297.

Tasiemski, T., Urmanski, P., & Wilski, M. (2013). Athletic identity and sport performance in athletes with disabilities participating in the Paracanoeing World Championship. *Int. J. Sport Psychol*, **44(5)**, 458-470.

Tunçkol, H. M. (2015). Applying athletic identity measurement scale on physical educators: Turkish version of AIMS. *Educational Research and Reviews*, **10(2)**, 177-183.

Van Raalte, N. S., & Cook, R. G. (1991, June). *Gender-specific situational influences on athletic identity*. In annual meeting of the North American Society for the Psychology of Sport and Physical Activity, Monterey, CA.

Wiechman, S. A., & Williams, J. (1997). Relationship of athletic identity to injury and mood disturbance. *Journal of Sport Behavior*, **20(2)**, 199.

Williams, J. E., & Best, D. L. (1990). Measuring sex stereotypes: A multinational study, Rev. Sage Publications, Inc.

Winsley, R., & Matos, N. (2011). Overtraining and elite young athletes. *The Elite Young Athlete*, **56**, 97-105.

Zhang, M., & Shao, B. (2021). Factor validity of the athletic identity measurement scale in a mainland Chinese sample. *Revista Brasileira de Medicina do Esporte*, **27**, 90-93.