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Development and validation of a measurement tool for assessing municipal sports services in Buenos Aires Province, Argentina

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ABSTRACT

Drawing upon a literature review concerning the diagnosis, description, and evaluation of local sports, we formulated and validated a precise measurement instrument intended for characterizing the municipal sports services in the province of Buenos Aires (PBA), Argentina. The objective of the present study was to design and validate a measurement instrument for the characterisation of the municipal sports services of the PBA. We conducted a content validation process in two phases. In the first phase, the initial preliminary version of the instrument was reviewed and assessed by a panel of five experts, with a follow-up and adaptation by the research team. Afterwards, the final measurement instrument was evaluated by an expanded panel of 12 experts, showing high validity indexes (Aiken's V = 0.93) with figures greater than 0.9 in the lower extreme confidence intervals. In the second phase, to assess the reliability of the measurement instrument, a pilot study was carried out with 10 municipal sports offices from the PBA. Correlation coefficients of the test and retest responses greater than 0.9 were obtained, reflecting a high level of stability in the answers of the officials. The validated tool is a useful and reliable resource for managers of municipal sports services to operate with updated technical knowledge in decision-making. The instrument could be useful for the provincial authorities of the area, as it would allow to have a georeferenced characterisation of the sports supply and guide the local governments in the decision about sports interventions and the monitoring of the public sports service.

KEYWORDS

Municipal Sports Services; Tool; Indicators; Sports Management; Assessment

1. INTRODUCTION

In recent decades, the practice of physical activity and sports (PAS) has increased its recognition as a determining factor in individual development and social well-being (Ferrando, 1996; Gallardo, 2001; Moscoso et al., 2009; París-Roche, 2020). Thus, around the world, the inclusion of physical activity within public health policies has gained considerable space (Blair et al., 2012; Paffenbarger et al., 2001). Consequently, public policies based on the principle of generalisation of the practice of PAS as a fundamental right have become essential, as PAS are a vehicle for the improvement of the physical condition, quality of life, and health of all citizens (Paipe et al., 2017). Thanks to this process, public institutions are involved in popularising PAS and facilitating them to the largest possible number of people in appropriate facilities (García-Unanue et al., 2016), understanding sports as a right of the citizen and, depending on the state, as a public service (Ferrando & Lagardera, 1998).

In Latin America, unlike Europe, each country has gradually granted legal scope to sport-related activities, with differences among themselves in relation to the degree of hierarchy (constitutional or legislative) and to the level of intervention of its regulatory framework as a right (Pita, 2014). Several Latin American nations recognise the right to sports in their constitutional texts, such as Brazil, Cuba, Colombia, Ecuador, Guatemala, Nicaragua, Paraguay, Venezuela, and Mexico, among others (Pachot, 2017). In Argentina, PAS obtained legal status in 2015 after the enactment of the Sports Law (Law No. 27.202, 2015). Under this frame, the Argentine state assumes the role of promoter and guarantor of access to PAS for the entire population. In that view, the formulation of a transversal public policy must promote a quality, accessible, and democratic sports practice, equal for all and globally sustainable (Teruelo & Solar, 2013).

In the implementation of public sports policies, local governments play a strategic role (Martínez, 2012). Argentina, as is the case in Spain (Camps, 2012), assumes the responsibility of providing the population with different opportunities to practice sports. As the municipal public administration is the level of management closest to the citizen, enabling access to physical activity for the entire population should be a priority goal of each sports service (Gallardo, 2002; Martínez, 2005). The evolution of PAS and their social impact have forced municipal governments to adopt new sports strategies and policies at the local level (Blanco, 2004). This evolutionary process of sports requires moving from a situation of voluntarism to one that needs optimal management (Armada, 2015).

Arboledas & Puig (2012) highlighted two types of studies in relation to the management of sports services in public administrations: on the one hand, those analysing specific aspects in particular management areas and, on the other, those that try to extract a general characterisation by examining the different management areas. Of the latter, numerous studies have been carried out in various countries such as Spain (Arboledas & Puig, 2012; Diputació de Barcelona, 2012; FAGDE, 2014; Gallardo, 2001; Martínez, 2005), England (Sports England, 2001), and Mozambique (Paipe et al., 2016), as well as others with a global scope (UNICEF, 2015). In this sense, the first methodological proposals for the design of a general diagnosis of the municipal sports service include sets of dimensions and indicators for the analysis of the actual sector functioning (Gallardo & Jiménez, 2004). Among the most widely used categories of analysis, those referring to infrastructure and facilities, budget and financing, human resources, material resources, supply of sporting activities, legal structure, and service management modes can be pointed out (Blázquez & Feu, 2010). Along these lines, a study was carried out in Argentina in 2010 on different dimensions (IPAP, 2010), but it was not systematically applied.

Detailed knowledge of the elements involved in the local sports system is key for planning local sports practice (Feller et al., 2013). Without an in-depth diagnosis and analysis, it is difficult to set objectives and measure the impact of public policies (Burriel, 1992). The use of study instruments requires considering local and regional applicability. Thus, validation becomes an important contribution to the context where it is applied (Ramos et al., 2015). Sports organisations need tools and research that facilitate and simplify the way of managing them (Mestre, 2008) and that allow to improve the quality and quantity of current services or promote new ones (García-Unanue, 2014; García-Unanue et al., 2014; Teruelo, 2009).

The set of indicators or diagnostic tools already designed for the local sports supply serve as a reference and analysis model, but they are not directly applicable since they do not necessarily fit the context and local characteristics of functioning (Paipe et al., 2016). Januário et al. (2009); Cavero (2016) have given importance to the contextual relevance in the methodological construction for the diagnosis of municipal sports. The types of organisation, the characteristics, as well as the interrelation with the community and the environment vary according to the geographical space, the economic situation, the political system of the region, and the cultural peculiarities, having an impact on the evolution of the sports system and on its features (Arboledas & Puig, 2016; Heinemann, 2002). Hence, the basic differences in the regulation of local administrations as well as the various

levels of development in each of the specific dimensions of the municipal sports area are decisive for the model diagnostic tests validated specifically for a particular geographic area.

Therefore, the existing proposals do not adjust to the current socio-economic context, the institutional and sporting reality of the moment, the legislation and environment of Argentina, or, in particular, the province of Buenos Aires (PBA). The objective of the present study is to design and validate a measurement instrument for the characterization of the municipal sports services of the PBA.

2. METHODS

2.1. Study Design and Procedure

The study was carried out between August 2019 and July 2020 through a mixed research design with both qualitative and quantitative concerns related to the measurement instrument to be validated (Östlund et al., 2011). In the first place, we conducted a literature review for the construction and initial design of the measurement instrument. Then, through the Delphi method, it was assessed by a panel of experts, with a follow-up and adaptation by the research team. Subsequently, to obtain the final measurement instrument, a larger panel of experts evaluated it, and a pilot study (test–retest) was carried out with officials of the municipal sports services. The study was approved by the Ethics Committee for Research with Human Beings (CEISH, as per its initials in Spanish: M10_2019_049) of the University of the Basque Country (UPV/EHU, as per its initials in Spanish and Basque).

2.2. Design of the Measurement Instrument

The design and initial elaboration of the measurement instrument were carried out in two stages: first, we performed a literature review focused on collecting diagnostic studies, characterisation, evaluation, and analysis of local sports that adjusted to the objectives of the research. In all cases, we reviewed studies including indicators (clustered in different dimensions or isolated) in their methodological sections. We compiled 12 studies (Arboledas & Puig, 2012; Diputació de Barcelona, 2012; FAGDE, 2014; FEMP, 2006; Gallardo, 2001; IPAP, 2010; Martínez, 2005; Ministerio de Salud, 2016; Ortiz, 2003; Paipe et al., 2016; Sports England, 2001; UNICEF, 2015) on the basis of that criterion. We identified the most used dimensions, indexes, and indicators that should be included in the instrument to be validated. In addition, taking into account the diagnostic work carried out by the Provincial Institute of Public Administration (IPAP, as per its

initials in Spanish) (IPAP, 2010) in the PBA, we developed the initial measurement instrument applicable to the PBA, considering conjunctural and contextual issues, including the population distribution, the characteristics of the Argentine sports system, and the legislative and constitutional bases in relation to sports in Argentina; the competences and attributions of the national, provincial, and local public administration in PAS; and the management methods of public administration in the municipalities of the PBA.

In a second stage of reviewing; the assessment and external validation of the designed measurement instrument (Thomas & Nelson, 2007), the Delphi method was used (Okoli & Pawlowski, 2004), following other studies (Blasco et al., 2010; Escobar-Pérez & Cuervo-Martínez, 2008; Sánchez-Alcaraz & Parra, 2013). Taking into account the guidelines about the number of members of an expert panel (Gable & Wolf, 1993; McGartland et al., 2003; Walz et al., 1991), our study included a deliberate sample of five specialists in sports management and/or the use of indicators to quantitatively assess each item. We also requested them to interpret, suggest, and recommend modifications to the proposed measurement instrument. During the process, the research group was in charge of specifying and attending to the work protocol, as well as analysing and interpreting the responses obtained (Gómez et al., 2014).

The experts were selected considering certain characteristics in relation to their profession, position, experience, their belonging to a certain sports group or centre, and the link with the research objective (Delbecq et al., 1975; Hsu & Sandford, 2007). Thus, each expert met at least two of the following inclusion criteria: i) having more than five years of experience in sports management, ii) being or having been a civil servant in a municipal sports service at the time of the investigation, iii) having more than five years of experience working with management indicators with a high degree of professionalism, and iv) being a member with a high position of responsibility in a public or private body working with management indicators.

The initial measurement instrument was sent by email to the members of the expert panel so that, individually, they could contribute and comment on the dimensions and items of the instrument in order to minimise errors related to the content, the syntax, or their suitability. The inputs provided by each of the experts were valued by the research team. They helped to order, systematise, reformulate, add, or remove items and/or dimensions of the measurement instrument. Three rounds were carried out with the experts to suggest for an alternative contribution to those already included or to add any other that they considered appropriate (Almonacid-Fierro et al., 2018; Paixão et al., 2019).

2.3. Validation Process

We conducted a validation process over the instrument finally designed in the previous stages. An enlarged panel of 12 experts took part, which is an acceptable quantity for the validation of the instrument following Ortega et al. (2018) and in accordance with the number of specialists indicated by Paixão et al. (2019). They met the profile and characteristics required in the design phase of the tool. For reliability, the test–retest method was carried out with 10 mulenicipal sports services of the PBA.

The experts assessed the measurement instrument anonymously, both qualitatively and quantitatively, based on the criteria of relevance, adequacy, clarity, and access (CONEVAL, 2014) in terms of a Likert-type scale from 1 to 5 (1 = very low and 5 = very high).

The experts' evaluations were subjected to one exclusion criterion: the item should obtain an Aiken's V lower than the established exclusion value ($V < 0.70$). Their evaluations were also subjected to two revision criteria: 1) the item should obtain an Aiken's V greater than or equal to the established exclusion value ($V \geq 0.70$), but the lower limit of its 90% confidence interval should be lower than the threshold of 0.7, and 2) at least one of the experts should recommend its review. After this process, the final version of the pilot measurement instrument was reached, as done by Robles et al. (2016).

In order to obtain the reliability of the measurement instrument and the validity of technical understanding (Paipe et al., 2016) as well as to contextualise the tool to the specific environment (Brewer & Jones, 2002), we conducted a pilot study with 10 municipal sports services of the PBA. Although the sampling was intentional and non-probabilistic (Polit & Hungler, 2000; Ramos et al., 2015), we stratified participants by population size. The measurement instrument was completed by heads of the municipal sports services with more than five years of experience in the position in order to test and assess the complexity, understanding, and ease of the gathering and loading of the information requested (Castillo et al., 2012; Ortiz, 2003). To do this, they filled in the questionnaire on two occasions (test–retest) in an interval of one month and assessed the instrument quantitatively based on a Likert-type scale from 1 to 5 (1 = very low and 5 = very high) according to the criteria of writing, sequence, design, and clarity of the language (Paipe et al., 2016; Veal & Darcy, 2014).

2.4. Statistical Analysis

In the quantitative analysis, we computed the Aiken's V content validity coefficient and its confidence interval using the Score Method with spreadsheets (Aiken, 1985). To calculate the exact

critical value of Aiken's V, we used the formula modified by Penfield and Giacobbi (2004) — $V = \frac{\bar{X} - l}{k}$ — where $\bar{x}$ is the mean value of scores given by N experts, l is the minimum value of the scale, and k is the rank of the scale. In our case, l =1 and k =4. The index took values in the [0,1] interval, where V = 0 indicates full disagreement and V=1 full agreement (Merino & Livia, 2009). A threshold $V \geq 0.7$ was considered as an acceptable agreement between experts in order to keep the item or question in the instrument.

In turn, the point value of the indicator was complemented with the 90% confidence interval. As V could be assumed as a rate and, thus, its distribution did not asymptotically approximate a normal distribution, the interval was obtained according to the Score Method (Newcombe & Merino, 2006). This ensured that the extreme values were also in the interval [0,1]. Ideally, the criterion for inclusion of an item in the instrument should apply the threshold of 0.7 to the lower bound of the confidence interval of V.

In the reliability analysis based on the test–retest approach, the stability of the responses was analysed with two types of tests. On the one hand, intra-class correlation coefficients were calculated for the numerical responses. The test statistic was estimated admitting fixed and random effects (mixed model) in the variation of responses (McGraw & Wong, 1996). We conducted F tests assuming the null hypothesis that correlation coefficients between former and latter responses were null (no correlation). On the other hand, the stability of the responses of the binary response items was assessed using the Kappa coefficient proposed by Cohen (1960), assuming that values greater than 0.6 indicate an acceptable concordance in the responses of test and retest. The statistical analysis was carried out with the Statistical Package for 19 Social Sciences (SPSS Inc, version 21.0, Inc. Chicago, Illinois, USA).

3. RESULTS

The initial measurement instrument, submitted for the consideration of five experts through the Delphi method, consisted of 44 items divided into nine dimensions (General Characteristics, Human Resources, Facilities Management 1 and 2, Social Development and Sports Support, Sports Supply, Communication and Information, Financing, and Regulation). In round 1, we received contributions and proposals for changes in all dimensions of the measurement instrument from all experts. In round 2, we changed the name of Dimension 2 (Facility Management) at the request of experts 4 and 5, and, in response to the comments of experts 1 and 2 on the extent of the

questionnaire, the number of questions was reduced (from 44 to 37). In round 3, the Social Development items were summarised to only one at the request of most of the experts, and some items were rewritten, shortening them following the recommendation of expert 4. Finally, round 4 was almost unanimously accepted by all the experts, since most of them did not make any contribution or suggestion for change. Therefore, the final measurement Instrument was left with 36 items divided into nine dimensions (General Characteristics [items 1–5], Human Resources [items 6–9], Sports Facilities [items 10–11], Facilities Management [items 12–14], Social Development and Sports Support [items 15–22], Sports Supply [items 23–25], Communication and Information [items 26–31], Financing [items 32–35], and Regulation [item 36]) (Table 1 and 2).

Table 1. The instrument

	I. General features and organizational structure	Answer		
1.	Locate the rank of Sports area in the municipal structure (Mark with X)	Nor formal area		
		Secretary		
		Sub secretary		
		Direction		
		Sub direction		
		Office		
		Agency / Institute		
		Other		
2.	Does the Sports Area share its functioning with other municipal services? (Mark with X. More than one is admitted).	Dos not share		
		Social Action		
		Youth		
		Elder		
		Health		
		Culture		
		Education		
		Tourism		
		Other		
3.	Is there a written document with the planning about the budget execution (Draw a circle around the correct option).	Yes	No	
4.	Number of clubs in the district formally constituted			
5.	Number of clubs in the district without formal registration			
6.	Number of Centers of Physical Education in the district (CFE)			

	II. Human resources		Permanent staff	Temporary staff	Provincial staff
7.	Number of personnel working in Sport area	Secretary			
		Sub-secretary			
		Director			
		Administrative staff			
		Coordination			

	Cleaning & maintenance
	Other
8. Number of workers in the Sport area with formal degree in Physical activity	

III. Regulation	Answer
11. Number of local norms during (2016-2019) related with sports in different aspects:	There is no approved norm
	Security in sports
	Infrastructure and facilities
	Scholarships, aid and transferences
	Support to sports events with special interest
	Norms for the sports area
	Other
9. Number of workers in the area with other degree education	
10. Number of workers in the Sport area without degree education	

IV. Financing	Answer	
12. Please register the total annual local budget (in local currency)	$	
13. Does the Sports area has own budget? (Draw a circle around the correct answer).	Yes	No
14. Register the annual local budget of the Sports area (in local currency).	$	
15. Register the percentage of sports budget directed to different actions	**Action**	**Budget**
	Construction and repairing of own facilities	%
	Maintenance and cleaning of facilities	%
	Acquisition of sport material	%
	Training, seminars	%
	Salaries and compensations	%
	Programs	%
	Support to outstanding sportsman and sportswoman	%
	Transferences to clubs and sport establishments	%
	Pool Maintenance	%
	Sport events	%
	Others	%
16. Register if the Sports area has entered to financing programs of any of following organizations. (Mark with X. More than one option is admitted).	No external financing has been granted	
	National government or national public institutions	
	Provincial government	
	International programs	
	Private organizations	
	Others	
17. Register the type of support/aid provided by the local government to local clubs or sports associations (Mark with X. More than one option is admitted).	None	
	Subsidies	
	Donation of spot material	
	Support with long distance travelling	
	Tax reduction	
	Inputs for building improvements	
	Others	

18. Which criteria are applied in order to allocate support or resources to clubs and institutions (Mark with X. More than one option is admitted).	There are no criteria	
	Legal status and updated documentation	
	Unfavorable economic situation	
	Volume of social sport arranged	
	Situation of urgency or risk of closure	
	Stimulus to management and development	
	Others	

V. Sport facilities	19. Register the number of facilities owned by the local government	20. Register the number of facilities used owned by other parties
Sport accommodation		
Health circuit		
Basketball court		
Bocce court		
Football court (11 players)		
Footsal court		
Handball court		
Hockey court with natural grass or soil		
Hockey court with synthetic grass		
Paddle court		
Rugby court		
Tennis court		
Volleyball court		
Running & walking open circuit		
Archery space		
Indoor pool		
Summer recreational pool		
Athlete court		
Cycle court		
Sport area		
Multipurpose outdoor sports center		
Multipurpose indoor sports center		
Multiple activity room		
Box room		
Muscle training room		
Table tennis room		
Other		

VI. Management of sport facilities	21. Register the number of own facilities according to its type of management							22. Register the number of non-own facilities used by the local government to sport activities	
	Own staff	Neighborhood commission	Jointly with third parties	Decentralized office	Concession	Agreement	Loan	Rent	Agreement
Sports centers									
Specific facilities external to sport centers									
Outdoor pool									

Indoor pool									
Public sport spaces (outside sports centers)									
Health circuit									
Other									

VII. Sports supply	23. Register the activities in which the local government offers sport school (Mark with X).												24. Register the activities available to support with scholarship in a club or association (Mark with X).	25. Register activities with local competition (Mark with X).
	Mixed					Male				Female				
	4 to 12 yo	13 to 17 yo	18 to 65 yo	> 65 yo	disabilities	4 to 12 yo	13 to 17 yo	18 to 64 yo	> 65 yo	People with disabilities	4 to 12 yo	13 to 17 yo	18 to 64 yo	> 65 yo	People with disabilities	
Chess																
Athletics																
Basketball																
Mountain bike																
Bocce																
Box																
Cycling																
Infant physical education																
Football 11																
Footsal																
Aerobic gymnasia																
Handball																
Hockey																
Karate/Judo/Martial arts																
Weightlifting																
Swimming																
Paddle																
Skating																
Latin rhythms/ Zumba																
Rugby																
Running & Walking																
Softball																
Tennis																
Table tennis																
Archery																
Volleyball																
Yoga																
Summer pool																
Holiday camp																
Other																

VIII. Social development and	Answer

support to talent					
26. Register the number of individuals during the last year in the following categories	Users of activities and municipal sport schools				
	Users of summer pools				
	Users of holiday camps				
	People that practice sport activities in clubs or associations with scholarship provided by the municipal government				
27. Does the municipal government provide free access to sport practice to the following groups? (Mark with X).	4 to 12 yo	13 to 17 yo	18 to 64 yo	Elder than 65 yo	People with disabilities
28. Identify the main topics in training and seminars (Mark with X. More than one option is admitted).	No training or seminars are being organized				
	Sport training				
	Arbitration				
	Violence in sport prevention				
	Drug abuse prevention				
	Bulling / grooming				
	Health & nutrition				
	Technical or labor training				
	Other				
29. Register the number of scholarships directed to sportsman and sportswoman annually given by the local government					
30. Register the modes in which the Sport area supports to featured athletes (Mark with X. More than option is admitted).	No support				
	Subsidy				
	Sport material				
	Delivery of dress or shoes				
	Aid with urban movements				
	Aid with long distance travelling				
	Access to sport facilities				
	Other				
31. Register the type of institutions with which the local government interacts in order to boost local sports (Mark with X. More than one option is admitted).	No institution				
	Physical Education Centers				
	Clubs				
	Retired centers				
	Neighborhood associations				
	Other local governments				
	Sports associations				
	Universities or superior education institutions				
	National public institutions related to sports				
	Provincial Secretary of Sports				
	NGOs				
	Other				

Communication & Information	Answer	
32. Does the Sport area has an own web page. Draw a circle around the correct option	Yes	No
33. Mark the media used by the local government to communicate the local sport supply (Mark with X. More than one option is admitted).	None	
	Social media	
	Local government's webpage	
	Special section of sports area in the local government´ webpage	

		Stationery
		Campaigns in mass media
		Press conferences & interviews
		Personal nets of influencers and leading neighbors
		Other
34.	Register in which institutions the municipal sport supply is disseminated (Mark with X. More than option is admitted).	Dissemination is not systematic
		Physical education centers
		Municipal offices
		Schools
		Other
35.	Does the Sports area have the following information spaces (Mark with X. More than one option is admitted).	None
		Offices inside the municipal sport facilities
		Central office in municipal hall
		Neighborhood points
		Other
36.	Does the local government have an open calendar with sports events? (Draw a circle around the correct option).	Yes No

Table 2. Experts' Qualitative Assessment of the Measurement Instrument

• **Expert**	• **Qualitative Assessment**
E1	**R1** GenFea: Include organisations without legal status. HHRR: Improve separation of roles of the municipal staff. FacMan1: Add tender in management modes. Reg: Add "Other." **R2** GenFea: Clarify what type of users is being referred to. SpoSupp: Add age groups in sports supply. Financ: Improve cost items. **R3** SocDev: Unify grant items. **R4** Without comments.
E2	**R1** GenFea: Request budget planning. The term "users of municipal service" is not clear. HHRR: There is no clear correlation between the organisation chart and the general goal of the instrument. The roles of the municipal sports staff are confusing. ComInfo: Review the quantity of forms in which supply is advertised. Financ: Review the proportion of the sports budget over the total one. **R2** HHRR: Distinguish between in-training personnel and employees. Financ: Improve cost items. **R3** SocDev: Include follow-up of users and grants. **R4** Without comments.
E3	**R1** GenFea: Improve writing of the Clubs item. Improve the definition of users. HHRR: Review the definition of "sports staff." Staff must be classified by activities. SpoSupp: Include the option of mixed-gender sports. **R2** HHRR: Distinguish by job positions. In all dimensions: indicate multiple responses where applicable. ComInfo: Review which type of advertising is aimed at. **R3** GenFea: Reformulate the work planning item more directly. **R4** Without comments.
E4	**R1** GenFea: Review other definitions of Planning. HHRR: Distinguish types of staff formal education. FacMan1: Rewrite management modes; it is difficult to complete it. SpoSupp: Items related to hours and age groups are too long. SocDev: Include another type of grants and existence of planning or calls. Financ: Include if aids or subsidies are granted. Reg: Include the option "Other." **R2** FacMan1: Modify while taking into account who responds to the questionnaire. FacMan2: Consider the name "Sports facilities" for this dimension. Include sport fields shared by multiple activities.

	R3 HHRR: Staff functions may be shared by employees. SpoFac and FacMan: Very long and complicated items. SocDev: The psychological support and seminar items are very long. Financ: The cost items are very long. **R4** SpoSupp: Very long.
E5	**R1** GenFea: Relate planning with budget. The distinction between users by gender and total users is complicated; simplify. HHRR: The number of other formal degrees is difficult to fill in. FacMan1: Simplify or delete cleaning and maintenance. Add "Transfer" as management mode. FacMan2: Metres and equipment by system are too complicated. SocDev: Distinguish topics of training offered. ComInfo: "Promotion events" is confusing. SpoSupp: Summarise the table of sports supply. Financ: Review the writing of prices and rates; it is too complicated. Reg: Norms can be registered by quantity or merely existence. **R2** SpoSupp: Add martial arts. HHRR: Add staff hired temporarily. FacMan1: Remove the column of municipal sports. FacMan2: Change to "Sports facilities." Financ: Reformulate the disposition of the costs item. **R3** HHRR: Include temporary contracts. SpoSupp: Simplify almost non-existent sports. Split by ages. Add disabilities. SocDev: Shorten training and seminars into one item. Financ: Remove or improve the prices item; many activities are free with exceptions. **R4** Without comments.

E= expert; R= round; GenFea= General Features; HHRR= Human Resources; SpoFac= Sports Facilities; FacMan= Facilities Management; SocDev= Social Development and Talent Supporting; SpoSupp= Sports Supply; ComInfo= Communication and Information; Financ= Financing; Reg= Regulation.

The instrument assessed by the 12 experts contained nine dimensions and 36 items. Each of the items was within the parameters established for the confidence intervals (Table 2). No item was removed. The instrument attained a V=0.9, with the dimensions of Communication and Information and Financing having the highest averages.

The criteria with the highest averages were Relevance and Adequacy (figures greater than 4.7 and 4.49, respectively, in all dimensions) and Aiken scores higher than 0.93 and 0.87 (Table 3). Within these dimensions, Regulation and Social Development obtained the highest averages (4.84 and 4.74, respectively), and the dimensions with the lowest values were Social Development and Financing (Social Development obtained a high average, but also higher variation. Financing had a slightly low mean, but also lower variation rank). The lowest averages occurred in the Access criterion (global mean of 4.47 and the minimum value of 4.25), expressing the difficulties perceived by the experts in the gathering of information by officials. The dimensions with the lowest scores in this criterion were Sports Facilities and Human Resources (averages of 4.63) (see Table 2).

Table 3. Experts' Quantitative Assessment by Dimension and Criteria

Dimension **Criteria**	**M**	**Aiken's V**	**90% CI**	
GenFea				
Relevance	4.72	0.93	0.84	0.97
Adequacy	4.72	0.93	0.84	0.97
Clarity	4.70	0.92	0.84	0.97
Access	4.46	0.86	0.76	0.93
HHRR				
Relevance	4.70	0.93	0.84	0.97

Adequacy	4.49	0.87	0.77	0.93
Clarity	4.83	0.96	0.88	0.99
Access	4.49	0.87	0.77	0.93
SpoFac				
Relevance	4.83	0.96	0.88	0.99
Adequacy	4.67	0.92	0.83	0.96
Clarity	4.75	0.94	0.85	0.97
Access	4.25	0.81	0.70	0.89
FacMan				
Relevance	4.83	0.96	0.88	0.99
Adequacy	4.83	0.96	0.88	0.99
Clarity	4.85	0.96	0.89	0.99
Access	4.51	0.88	0.78	0.94
SocDev				
Relevance	4.90	0.97	0.90	0.99
Adequacy	4.96	0.99	0.93	1.00
Clarity	4.65	0.91	0,82	0.96
Access	4.46	0.86	0.76	0.93
SpoSupp				
Relevance	4.85	0.96	0.89	0.99
Adequacy	4.85	0.96	0.89	0.99
Clarity	4.56	0.89	0.79	0.94
Access	4.29	0.82	0.72	0.90
ComInfo				
Relevance	4.92	0.98	0.91	1.00
Adequacy	4.92	0.98	0.91	1.00
Clarity	4.65	0.91	0,82	0.96
Access	4.36	0.84	0.74	0.91
Financ				
Relevance	4.85	0.96	0.89	0.99
Adequacy	4.80	0.95	0.87	0.98
Clarity	4.74	0.94	0.85	0.97
Access	4.56	0.89	0.79	0.94
Reg				
Relevance	4.90	0.98	0.91	0.99
Adequacy	4.87	0.97	0.89	0.99
Clarity	4.76	0.94	0.86	0.98
Access	4.81	0.95	0.87	0.98

Note: M= mean; 90% CI= confidence intervals at 90% for Aiken's V; GenFea= General Features; HHRR= Human Resources; SpoFac= Sports Facilities; FacMan= Facilities Management; SocDev= Social Development and Talent Supporting; SpoSupp= Sport Supply; ComInfo= Communication and Information; Financ= Financing; Reg= Regulation.

In relation to the reliability of the instrument's final version, the results of the pilot study yielded a global average of 4.75 points (out of 5 points). Writing was the category with the highest score (4.70), followed by Language Clarity (4.60). Design and Sequence (structure) had a mean of 4.50 and were the criteria with the lowest score (Table 4). Taking into account that none of the officials participating in the pilot study presented any questions, comments, or observations about the measurement instrument when filling it in, we consider that the proposed instrument is a useful tool in the field study of municipal sports in the PBA, Argentina.

Table 4. Quantitative Assessment of the Pilot Study

	Writing	Sequence (Structure)	Design	Clarity	Average
Mean	4.70	4.50	4.50	4.60	4.75
Aiken's V	0.92	0.87	0.87	0.90	0.94

Regarding the stability of the responses of the officials in the test–retest, no variations were recorded in the responses in the General Features dimension (Table 5). In the rest of the dimensions, we detected different responses in a few cases. Within numerical response items, the test–retest correlation was higher than 0.98 in almost all cases, except for item 11 in the Regulation dimension, which referred to the number of sports safety norms that have been approved by the local government during the last four years. In binary response items, the discrepancies in the responses decreased the correlation coefficient, although in most of the items it was higher than 0.6, except in item 16 of the Financing dimension, which concerned external sources of funding. Only one item was detected where the agreement of responses in the test–retest was null. After speaking with the official in question, we found that the official made a mistake in the retest in said item due to distraction.

Table 5. Stability of Responses in the Test–Retest Approach

Dimension	Total of items and sub-items	Total of items and sub-items with numerical response	Total of items and sub-items with binary response	Items with numerical response (intra-class correlation)	Items with binary response (Kappa coefficient)
GenFea	21	3	18	Without variation	Without variation
HHRR	30	30	0	29esta 0.987*** 21esta 0.994***	Not applicable
Reg	7	6	1	311segu 0.66** 311infra 0.982*** 311eventos 0.985*** 311norms 0.984*** 311other 0.999***	Without variation
Financ	34	13	21	415subs 0.999*** 415pisci 0.988*** 415other 0.999***	416no 0.615** 416prov 0.545*
SpoFac	54	54	0	519play 0.999*** 520multi 0.997***	Not applicable
FacMan	52	52	0	621pisccubprop 0.800** 621pisccubconv 0.00	Not applicable
SpoSupp	450	0	450	Not applicable	Without variation 723pisve_mixto2 0.783**
SocDev	39	5	34	826colo 0.999***	830inst 0.825*** 831univ 0.8**
ComInfo	21	0	21	Not applicable	934otros 0.783** 935otros 0.615**

*NOTE: GenFea= General Features; HHRR= Human Resources; SpoFac= Sports Facilities; FacMan= Facilities Management; SocDev= Social Development and Talent Supporting; SpoSupp= Sport Supply; ComInfo= Communication and Information; Financ= Financing; Reg= Regulation; *** p-value <0.01 ** p-value <0.05 * p-value <0.1.*

4. DISCUSSION

As other pre-existing studies related to municipal sports services show (Arboledas & Puig 2012; Gallardo, 2002; Martínez, 2005; Paipe et al., 2016), a measurement instrument is a fundamental tool for research in this field of sports management. We designed and validated an instrument for the characterisation of the municipal sports services of the PBA. The results obtained confirm the content validity of the instrument developed with an Aiken's V of 0.93 and with lower extreme values in 90% confidence intervals greater than 0.9. In relation to reliability, we attained correlation coefficients of the test–retest responses higher than 0.9, so it can be established that the repeatability of the measurement instrument is high, with little dependence on the respondent.

Ortega et al. (2018) pointed out that the comments provided by the experts on each item are necessary to achieve the calibration of the tool and improve the design. As in previous works, experts in the subject of the study were called. We conducted four rounds of inquires between judges in the pursuit of the best possible design. The number of rounds was higher than that implemented by Calabuig & Crespo (2009); Paipe (2016). The experts suggested the elimination, incorporation, and modification of different items of the measurement instrument, which is common in studies with similar characteristics (Robles et al., 2016).

With relation to the quantitative values of the content validity given by the panel of experts, we summarised it in the Aiken's V = 0.93. Through this procedure, the adequacy of the content of each item was calculated with a high level of reliability, reaching values much higher than the minimums proposed by Penfield and Giacobbi (2004) and those obtained by other studies with similar characteristics (Paipe et al., 2017).

The reliability of the measurement instrument was assessed by a pilot study between officials of 10 municipal sports services of the PBA, according to the procedure followed by other studies (Fanega, 2016; Martínez, 2005; Paipe et al., 2016; Pereira, 2013). The stability of responses was high. We validated both the content and reliability of the instrument, showing a high level of agreement between judges and officials.

Thus, the validated measurement instrument is composed of 36 items, lower than that proposed by Sport England (2001) 51, FAGDE (2014) 51, Diputació de Barcelona (2012) 45, Arboledas and Puig (2012) 43, and Paipe et al. (2016) 41, and higher than that used by IPAP (2010) 13, Ministerio de Salud (2016) 13, UNICEF (2015) 20, FEMP (2006) 21, Ortiz (2003) 20 and Gallardo (2001) 27. The number of items does not take an excessive time for questionnaire filling, as

short responses are requested. In addition, the gathering of data is attainable. Regarding the dimensions, the measuring instrument comprised nine, the same number as Sports England (2001), Arboledas and Puig (2012), and Paipe et al. (2016), which is higher than other studies that have proposed between six and eight dimensions (Gallardo, 2001; Martínez, 2005; Ortiz-Rodríguez, 2003).

5. CONCLUSIONS

We developed a measurement instrument to characterise municipal sports in the PBA, Argentina, composed of 36 items clustered in nine dimensions. After a content validity evaluation process, the instrument yielded a coefficient V=0.93, with a minimum of 0.9 in all items. In turn, the reliability analysis produced perfect correlation coefficients in several items and greater than 0.9 in the rest, indicating a high level of concordance stability between officials in the test–retest.

The instrument contributes to obtain a diagnosis regarding the supply of activities, communication, financing, regulation, and promotion of municipal sports services in the 135 districts of the PBA. The instrument could be useful for the provincial authorities of the area, as it would allow to have a georeferenced characterisation of the sports supply and guide the local governments in the decision about sports interventions and the monitoring of the public sports service.

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CONFLICTS OF INTEREST

The authors declare no conflict of interest.

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