

User dropout in a Spanish sports center: segmentation

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Summary: Sports dropout is a socioeconomic problem. Knowing the reasons why users drop out of sports centers and grouping them in segments has great practical application. These were the goals of this study. The sample included 642 members who left the sports center. The instrument used was a scale of reasons for dropping out of those centers. Descriptive and cluster analyzes were performed. Data showed economic reasons as the main cause for dropout. Cluster analysis supported these reasons in all its segments, which differed according to sex and educational level.

Key words: Sports Psychology. Abandonment. Fitness centers. Motivation. Management.

1 INTRODUCTION

In industrialized countries, there is concern about health problems associated with their citizens' physical inactivity (GUTHOLD *et al.*, 2008). Several programs have been launched to promote physical-sports practice in those countries (DAUGBJERG *et al.*, 2009). However, high dropout rates indicate that promotion plans are not proving effective (HAASE; KINNAFICK, 2007).

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Sports dropout is obviously a serious problem that contributes to physical inactivity (GONÇALVES; FIGUEIREDO; SILVA, 2007).

However, the consequences of a physically inactive population are not limited to the field of health. Physical-sports practice plays other important roles such as education, recreational occupation of time or income generation (BEDNARIK *et al.*, 2007). From the economic perspective, for an emerging and competitive industry such as sports (LANGVINIENE; SEKLIUCKIENE, 2008), it is also important that people practice physical and sports activities (BEDNARIK *et al.*, 2007). In this context, establishing strategies to achieve satisfied subjects and avoid dropout is crucial to a sports center (BODET, 2012).

Knowing the reasons leading to dropout is important to improve management of such a complex issue as ensuring loyalty of subjects enrolled in sports centers (MARTÍNEZ; MARTÍNEZ, 2009; NUVIALA *et al.* 2012a.). Listening to the experiences of users is essential in implementing any type of service that seeks to improve efficiency and effectiveness of its management and achieve user loyalty (MARTÍNEZ; MARTÍNEZ, 2008). Therefore, it is not surprising that studies appeared in recent years with a focus on knowing the attitudes and behaviors of sports facilities' users (MARTÍNEZ; MARTÍNEZ, 2009; NUVIALA *et al.*, 2012b, 2013b).

A literature review shows studies on sports dropout, most of which focused on the practice of competitive physical activity (ALMAGRO; SÁENZ-LÓPEZ; MORENO, 2010; JÕESAAR; HEIN, 2011), focusing on works whose subject population is adolescents (JÕESAAR; HEIN; HAGGER, 2011). However, there are few studies on the reasons that lead users to drop out of centers and sports organizations without quitting physical activity. Therefore, Nuviala *et al.* (2012c) designed and validated a scale to know the reasons why subjects drop out of sports centers. That instrument allows understanding user behavior in order to take action. However, due to the variety of their behaviors, it is difficult

to satisfy all of them with the same product, service or strategy (PICÓN; VARELA, 2000), so it is necessary to try to group them in order to establish corrective or preventive actions towards user groups.

One of the most common ways to get to know an industry and to adapt to the needs of its users is to segment it into more homogeneous subsets (BEDNARIK *et al.*, 2007; PICÓN; VARELA, 2000). However, there is no consensus about segmentation methods and variables used to do that (PICÓN; VARELA, 2000). Won, Hwang and Kleiber (2009) note that a priori techniques used to be applied in which the researcher sets groups, size and description based on any variable of interest, usually a sociodemographic one. In recent years, post-hoc segmentation using cluster analysis to define groups is the most common method (KRUGER; SAAYMAN; ELLIS, 2011; LUNA-AROCAS; TANG, 2005; WON; HWANG; KLEIBER, 2009). Sociodemographic variables have also lost their hegemony, since segmentation based on psychographic or behavioral variables seems more appropriate for an organization to conduct a better adjustment of its offer (PICÓN; VARELA, 2000).

A priori segmentation still proliferate in sports (BEDNARIK *et al.*, 2007.), although those using cluster analysis already prevail (ALEXANDRIS; TSIOTSOU, 2012; KRUGER; SAAYMAN; ELLIS, 2011; LUNA-AROCAS; TANG, 2005; WON; HWANG; KLEIBER, 2009). However, most of the latter focus on passive users (for instance, sports events viewers) (ALEXANDRIS; TSIOTSOU, 2012). Segmentation studies with active subjects are not common in this industry (LUNA-AROCAS; TANG, 2005; WON; HWANG; KLEIBER, 2009). We must add the fact that although the majority of the workforce practices non-competitive physical-sports activities, segmentation studies focus on competitive sports (KRUGER; SAAYMAN; ELLIS, 2011). Sports center users are not usually professional athletes (LUNA-AROCAS; TANG, 2005) and there are few previous studies on the reasons why individuals attend or remain in sports centers. Studies on people who have left sports centers are even rarer (NUVIALA

et al., 2012c, 2013b) and we are not aware of any study grouping them.

Based on this and on its possible relevance for research and its practical application on management of sports center dropout, the study's goals were to determine the reasons for user dropout at a Spanish sports center and to conduct a complete segmentation of subjects who dropped out of it.

2 METHOD

2.1 PARTICIPANTS

The sample consisted of 642 people who dropped out of a sports center in a Spanish city, of which 55.4% were male and 44.6% were female, with mean age of 30.1 ± 9.8 ; 79.2% had higher education qualifications and only 1.3% reported having made basic studies. For 59.8%, practice happened two to three times a week, and 25.8% reported practicing sports four or more times a week. Finally, the most common length of practice sessions was 60-90 minutes for 44.4%, followed by 30-60 minutes for 25.2%.

2.2 INSTRUMENTS

We used the scale of reasons for dropping out of sport centers (NUVIALA *et al.*, 2012c). After an exploratory factor analysis, it grouped its 22 items in five dimensions (Economics, Practice, Satisfaction, Enjoyment and Entertainment) that accounted for 65.55% of variance. Reliability of the instrument after this exploratory analysis was .898. A subsequent confirmatory factor analysis, performed in order to confirm the validity of the instrument and reduce the number of items, ratified the five-dimensional model and reduced it to 12 items, with a final reliability of 0.861 (see appendix). Fit indices showed optimal results (GFI=.974; AGFI=.955; NFI=.976; TLI=.965; CFI=.986;

IFI=.976; RMR=.064; RMSEA=.046; AIC=171.567; ECVI=.268; $\chi^2=103.567$; $\chi^2/df=2.354$) (NUVIALA *et al.*, in press).¹ Several sociodemographic variables were added to the scale, such as age, sex, education, occupation and sports activity performed.

2.3 PROCEDURE

Fieldwork was conducted through a questionnaire managed by a preformed group of surveyors. Participants were asked to contribute and to inquire about any doubts they might have. The task took about ten minutes. Before data collection, permission was obtained from those in charge of the organization taking part in the study. Likewise, all users voluntarily agreed to participate.

2.4 DATA ANALYSIS

Descriptive statistics were calculated. Cluster analysis was performed – a multivariate technique that seeks to group elements (or variables) intended to achieve maximum homogeneity in each group and find major differences between them. We conducted cluster analysis in two stages – procedure based on an algorithm that produces optimal results if all the variables are independent and continuous variables are distributed according to normal distribution, but it works reasonably well in the absence of these assumptions (CHIU *et al.* 2001). It is suitable for situations including a large number of individuals. Qualitative and quantitative variables can be used, even when the number of clusters is not known a priori. Reasons for dropping out were the variables used to establish clusters, through the ratings given to each of the dimensions covered by the study. Chi square statistics (χ^2) were subsequently applied in order to differentiate between different groups and the Z-test. SPSS 20.0 software and a significance level of 95% were used.

¹NUVIALA, Alberto *et al.* Validez de constructo de la escala motivos de abandono de centros deportivos. *Revista Internacional de Medicina y Ciencias de la Actividad Física y el Deporte*, Madrid, in press.

3 RESULTS

Before cluster analysis, descriptive statistics were generated for the entire sample (Table 1). Cluster analysis established two different groups including 46.4% and 53.6% of the population studied. The Economy and Practice variables were most relevant to distribute people in segments (Table 1). In order to determine the quality of that grouping, results were reviewed according to Kaufman and Rousseeuw (1990), reaching a correct structure of the clusters obtained.

Regarding the characteristics of each group, segment 1 presented value 1 (strongly disagree) as the most repeated response in each of the variables. Meanwhile, segment 2 has solution 2 (disagree) as a median in four of the variables, while in the Economy dimension the most frequent response was 5 (strongly agree). Table 1 shows the importance given to each scale factor as grounds for dropping out by members of each of the segments.

Table 1 - Average values of each dimension of the scale in the total sample and for the segments resulting from the cluster analysis. Importance of each factor as a predictor of the segments.

	Total sample (n=642)	Segment 1 (n=298)	Segment 2 (n=258)	Importance as predictor
<i>Satisfaction</i>	1.76±1.16	1.06±35	2.55±1.22	.78
<i>Enjoyment</i>	1.74±.96	1.32±.72	2.17±.99	.68
<i>Practice</i>	2.06±1.15	1.38±.63	2.81±1.11	.94
<i>Economy</i>	2.74±1.14	2.28±1.47	3.13±1.34	1.00
<i>Leisure</i>	1.74±.85	1.33±.62	2.20±.85	.68

Regarding differential analysis of the segments (Table 2), only sex and educational level showed significant differences between groups. It can be seen that the percentage of women is higher in group 2 than in group 1, while men differences in the two segments are scarce. That did not prevent male components from prevailing in group 1. Regarding educational level, we found that the percentage of people with secondary education is higher

in group 2, while differences in other educational levels showed similar percentages between groups.

4 DISCUSSION

Descriptive results for the total sample on the reasons for dropping out of the sports center point to economic factors as the main cause. Ruiz, García and Díaz (2007) have already pointed to economic reasons as a cause for sports dropout, although it was far from being the most often alleged cause. However, these authors did not focus on subjects that had dropped out of sports centers, but rather on those who dropped out of a physical-sports practice which could be organized or not. Costs of services offered by a sports center are presumably higher than physical sports practice in other contexts, which could explain the present study's increased emphasis on economic motives for dropping out.

626

Table 2 - Differential analysis between resulting segments

		Segment		χ^2	p
		1	2		
Sex	Men	51.6%	48.4%b	6.608	.010
	Women	40.6%	59.4%b		
Age	<26	52.3%a	47.7%b	6.169	0.104
	26-45	43.2%a	56.8%a		
	46-65	38.9%a	61.1%a		
	>65		100.0%		
Education	Basic	50.0%a	50.0%a	8.806	.012
	Secondary	33.0%a	67.0%b		
	Higher	49.1%a	50.9%b		
Occupation	Working	42.2%a	57.8%a	6.090	0.298
	Retired/Pensioner	66.7%a	33.3%a		
	Unemployed	50.0%a	50.0%a		
	Student	49.6%a	50.4%a		
	Housework	16.7%a	83.3%a		
	Others	25.0%a	75.0%a		

Activity	Dry with music	42.8%a	57.2%a	2.608	0.625
	Aquatic with music	35.3% a	64.7%a		
	Dry without music	50.0%a	50.0%a		
	Aquatic without music	46.3%a	53.7%a		
	Free users	47.8%a	52.2%a		
Weekly attendance	4 or more times per week	48.7%a	51.3%a	2.158	0.707
	2-3 times a week	45.5%a	54.5%a		
	1 time per week	47.5%a	52.5%a		
Daily time spent on the activity	Under 30 minutes	53.8%a	46.2%a	0.454a	0.797
	31-60 minutes	41.8%a	58.2%a		
	61-90 minutes	47.5%a	52.5%a		
	91-120 minutes	50.0%a	50.0%a		
	Over 121 minutes	46.2%a	53.8%a		

Note: Each accompanying letter indicates a subset of the Segment whose column proportions do not differ significantly from each other at level 0.05.

Source: Prepared by the authors

It may also be understood that most subjects who drop out of a sports center argue that their perception of overpricing is the reason for them to leave, given the current economic crisis. But those economic conditions, besides affecting users' purchasing power, can limit the options of sports centers to provide services at a lower cost. In Spain, a clear example of this is the recent 13% increase in the value added tax (VAT) for the sports.

Attention given in recent years to the construct of perceived value as a predictor of subjects' loyalty is consistent with the importance of economic reasons for the phenomenon of sports center dropout (BODET, 2012; MURRAY; HOWAT, 2002). The perception of value results from a combined evaluation of perceived benefits and sacrifices, where it is necessary to explain that the price of service is one of the different dimensions determining that perception, but not the only one (BOKSBERGER; MELSEN, 2011). Quality of service has proved to be a valid way to improve perceived value (BOKSBERGER; MELSEN, 2011; MURRAY; HOWAT, 2002; NUVALA *et al.*, 2012b). Therefore, good management of sports centers could lead to a better evaluation of service prices and reduce the center's dropout cases for economic reasons.

In any case, although economic factors were the most relevant reasons for dropping out of the sports center, its evaluation (close to 3 on a 3-5 scale) indicates that there is no consensus in pointing the Economy dimension as the common key for dropping out. Previous studies on sports dropout, regardless of the instrument used, do not find that consensus either, since the percentage of subjects who pointed out each of the reasons in different works rarely exceeded 50% of the sample (RUIZ; GARCÍA; DÍAZ, 2007). The remaining factors obtained an average score lower than Economics. However, considering the complexity of a multifactorial phenomenon as sports dropout (GÓMEZ-LÓPEZ *et al.*, 2011; RUIZ; GARCÍA; DÍAZ, 2007) and that all factors mentioned are specific to evaluate the reasons for dropping out of sports centers (Nuviala *et al.*, 2012c), they need to be taken into account. These include the factor that groups reasons for dropping out related to physical-sports practice, such as its massification or the amount of materials needed for it, followed by other dimensions including satisfaction with staff, competition in leisure and enjoyment achieved at the center.

Following this priority, those dimensions should be addressed in order to reduce dropout at the center. In this regard, quality of service has also proven to be a precedent factor for user loyalty by ways independent from the previously mentioned perceived value (MURRAY; HOWAT, 2002). Effective quality management could eliminate internal aspects of the sports center that might contribute to its abandonment, but let us not forget that there are other aspects outside the center that may also affect adherence to the practice (lack of time, need for transportation to get to the center...) (GÓMEZ-LÓPEZ *et al.*, 2011).

Regarding cluster analysis, we found two segments based on the scale of reasons for dropping out of the sports centers. According to the criteria put forward by Kaufman and Rousseeuw (1990), there is weak but obvious evidence of the existence of that two-cluster structure. As shown by different studies that establish groups using cluster analysis based on motivation for practice

(NUVIALA *et al.*, 2013a; SICILIA *et al.*, 2009), the main feature differentiating both segments was the fact that one of them had lower scores on the factors of the scale used for segmentation.

The interpretation of this fact with respect to participation in physical and sports activities shows that when faced with the same behavior, subjects may be more or less motivated (DECI; RYAN, 2000; NUVIALA *et al.*, 2013a; SICILIA *et al.*, 2009), which then will affect adherence, for instance (DECI; RYAN, 2000). Transferring this argument to the area of sports dropout, one would think that for this behavior to occur, some subjects would require a higher degree of motivation than others. However, this single explanation applied to sports dropout could be superficial and of little practical use.

In order to explore further the characteristics of each segment, segment 1 shows average values for all dimensions of the scale lower than segment 2. However, only slight differences were found in the order of the factors according to their relevance, and in both cases Economy was the most important dimension, followed by the Practice factor. As deduced from the preceding paragraphs, the average low scores of segment 1 can be explained by the fact that the same reason is common to a large percentage of the population (RUIZ; GARCÍA; DÍAZ, 2007) resulting in low mean scores. In turn, the higher values obtained by segment 2 may be due, in addition to the reason given in the previous paragraph, to the multifactor origin of dropout (GÓMEZ-LÓPEZ *et al.*, 2011; RUIZ; GARCÍA; DÍAZ, 2007). The results could tell us that the subjects of segment 2 attributed their abandonment to more factors than segment 1 subjects, so that the mean evaluation would be higher for all dimensions.

Regarding differential analysis based on sociodemographic variables, significant differences were found only for gender and educational level. Segment 1 was marked by the male component while women prevailed in segment 2, consistent with Ruiz, García and Díaz (2007), whose results suggest that women are more likely

to identify multiple factors as reasons for abandonment. As for educational level, firstly, almost 80% of the population studied had higher education qualifications. Having said that, in absolute terms, both groups have a similar number of components with basic and higher education, the difference being in those with secondary education, who are more numerous in segment 2, which is larger. As a whole, we cannot say that one segment has a higher or lower level of education than the other.

There are few studies on the reasons for sports dropout that cover a wide population and there is no evidence of any precedent factor directed exclusively to the context of sports centers. However, there are indications that the reasons for abandonment may vary according to people's sex, age and occupation (RUIZ; GARCÍA; DÍAZ, 2007), although the study mentioned was restricted to describing percentages without applying any inferential statistics to evaluate the significance of those differences. For those reasons, it is difficult to compare the results of this study with the literature on sports dropout. That is different from other nonspecific studies such as the reasons for sports practice, where sociodemographic variables such as gender, age (LUNA-AROCAS; TANG, 2005; NUVALA *et al.*, 2013a; SICILIA *et al.*, 2009) or educational level have proved to differentiate between segments of the sports sector (NUVALA *et al.*, 2013a).

From the practical point of view, this is a pioneering work in the study of the reasons for dropout in the field of sports centers. It provides useful information for managers about the main factors causing users to drop out and how they are distributed according to segments. That favors the development of strategies and service quality management focused primarily on issues most likely to cause abandonment.

The main limitation of the study was that the sample was composed of subjects who dropped out of a single sports center on a single city (chosen according to convenience). While we cannot consider the number of participants as a large sample,

the fact remains that the work's strong point is a large sample of individuals who have dropped out of the sports center. It is difficult to have access to those subjects and their data, which sports centers usually do not provide.

Future studies could examine the generalizability of the results found in public and private sports centers with different management strategies, in different places and cultures. To study the relationship of these reasons for dropping out to others – time spent at the center before dropping out, the timing of dropout or value judgments previous to dropping out – may also provide information to understand the phenomenon.

In conclusion, economic matters were the main reason for dropping out of the sports center. But this phenomenon is not derived solely from a perception of excessive fees at centers; other factors such as massification and material needed for practice and, to a lesser extent, personal attention, leisure competition and enjoyment of the center, can lead to dropping out of the organization. Segmentation based on those reasons showed the existence of two groups; economic reasons prevailed in both segments, followed by those related to massification of practical and materials available – hence the need to implement quality-improvement strategies specifically focused on aspects causing people to drop out. The fact that the main difference between segments was that the second segment reached higher mean scores for all dimensions of the dropout reason scale may indicate a higher number of reasons for dropout. Adding that only the sociodemographic variables gender and educational level differed significantly from group 1, predominantly male, and group 2, where women prevailed and most subjects with secondary education were located, it helps sports managers to implement the strategies mentioned according to the needs of each type of user.

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