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ORIGINAL

DESIGN AND ANALYSIS OF THE SPORT SERVICES ASSESSMENT QUESTIONNAIRE (EPOD2)

DISEÑO Y ANÁLISIS DEL CUESTIONARIO DE VALORACIÓN DE SERVICIOS DEPORTIVOS (EPOD2)

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ABSTRACT

Nowadays the assessment of Sport Services is one of the most studied facts due to the need to understand the users' behaviour and for the use of the information that the organizations obtain through this type of research. There are different measuring instruments but they have several limitations. The aim

of this study is to validate an instrument and verify its reliability as a means of assessment of the services provided by the different sport organizations. To do this a questionnaire was made, composed of three areas: perceived quality, satisfaction, and perceived value. A statistical analysis, an exploratory factor analysis, and a confirmatory factor analysis were performed on the items and the validity was determined. The results were embodied in a final questionnaire consisting of eight dimensions and 25 items, able to assess the perceived quality, satisfaction and perceived value of the service provided by the sport organizations.

KEY WORDS: Validation, reliability, perceived quality, satisfaction, perceived value

RESUMEN

La valoración de los servicios deportivos es uno de los hechos más estudiados en la actualidad debido a la necesidad de comprender el comportamiento de los usuarios y por el aprovechamiento de la información que las organizaciones obtienen gracias a este tipo de investigaciones. Existen distintos instrumentos de medida pero presentan diversas limitaciones. El objetivo de este trabajo es validar un instrumento y constatar la fiabilidad del mismo como medio de evaluación de los servicios que prestan las diferentes organizaciones deportivas. Para ello se construyó un cuestionario conformado por tres áreas: calidad percibida, satisfacción y valor percibido. Se realizó un análisis estadístico de los ítems, un análisis factorial exploratorio, un análisis factorial confirmatorio y se determinó la validez. Los resultados se materializaron en un cuestionario final compuesto por ocho dimensiones y 25 ítems, capaz de evaluar la calidad percibida, satisfacción y valor percibido del servicio que prestan las organizaciones deportivas.

PALABRAS CLAVE: Validación, fiabilidad, calidad percibida, satisfacción, valor percibido

INTRODUCTION

The analysis and understanding of the users and service consumers' satisfaction is one of the most studied facts in recent years due to two factors: in-depth understanding of their behaviour and the use of the information the organizations may have with this type of research. (Martínez-Tur, García-Buades, Marzo and Gosálvez, 1998; Martínez-Tur, Peiró, Ramos and Tordera, 2000). Both factors have a common goal, to improve the quality and the perception the users have of the service provided in an area as competitive and innovative as that of sport services. The commitment to quality and user's satisfaction is the key to the development and consolidation of the different organizations (Afthinos, Theodorakis and Nassis, 2005; Westerbeek and

Shilbury, 2003), while increasing users' loyalty and commitment (Calabuig, Burillo, Crespo, Mundina and Gallardo, 2010).

In the field of sports services there are different tools to assess the perceived quality and the users' satisfaction such as the one designed by Afthinos et al. (2005), the one developed by Bodet (2006) for French Fitness sports centres, NEPTUNO designed by Calabuig, Quintanilla and Mundina (2008), QUESC created by Kim and Kim (1995), the one designed by Mañas, Jiménez, Muyor, Martínez and Moliner (2008) for a private sport centre in Almeria, ICPAF by Morales, Hernández-Mendo and Blanco (2005), the one created by Sanz, Redondo, Gutiérrez and Cuadrado (2005) to assess satisfaction in spinning practitioners, or the Q-10, designed by Rial, Varela, Rial and Real (2010).

However, these instruments have revealed a number of limitations (Alexandris, Zahariadis, Tsorbatzoudis and Grouios, 2004; Kim and Kim, 1995; Kouthouris and Alexandris, 2005) among which we can mention the large amount of items that are part of it with the difficulty entailed in performing the field work. For example Quesc, by Kim and Kim (1995), consists of 56 items, ICPAF by Morales et al (2005) is formed by 52, the one designed by Afthinos et al. (2005) has 42 items, and the one made up by Bodet (2006) consists of 44 items. Calabuig et al. (2008) have criticized specially the lack of specificity of the analytical instruments. Therefore specific instruments have been developed for each of the different types of services (Martínez and Martínez, 2009). Thus, NEPTUNO is a specially designed questionnaire to assess nautical schools in the Valencian community, problem or virtue that also presents the instrument by Sanz et al (2005), making it difficult to generalize the obtained results to other services or activities. Finally Q-10 and the instrument by Mañas et al. (2008) are tools that lack of dimensions that are important object of study to assess the satisfaction and perceived quality of the sport services such as the material elements for the development of the sport itself, communication from and to the organization or the administrative aspects.

These limitations (excessive number of items, high specificity that prevents the generalization of results and lack of dimensions or essential factors in the service assessment) led us to design a questionnaire for assessing the sports services and the activities they provide (EPOD2), composed initially of 34 items grouped into three different areas: perceived quality, satisfaction and service value. EPOD2 respects Brady and Cronin's instructions (2001), who suggest that the perceived service quality should be measured by three different dimensions: the quality of the interaction, the environmental quality of the service, and the quality of the results.

The quality of the interaction refers to the client's experience as a result of the interaction with the human element of the organization, playing a very important role in the service provision (Brady and Cronin, 2001). Employees' attitudes, behaviour and experience shall be included within this type of quality. The environmental quality relates to tangible or physical elements of the organizations, among which, the facilities design, environmental conditions and

social factors will be analyzed. Finally, the quality of the results refers to meeting the expectations of a client, and among which we can observe the waiting times, the administrative tasks that allow you to perform the activity or the satisfaction after using the service.

The EPOD2 questionnaire has included a satisfaction scale as a different construct to the perceived quality. Satisfaction is a complex concept when being defined (Marzo, Martínez-Tur, Ramos and Peiró, 2002). It has been conceptualized as a result and as a process, as a cognitive response and as an emotional one. Several authors differentiate quality and satisfaction arguing that quality is rather an attitude durable over time compared to a transient judgement before a specific service, which would be the satisfaction (Varela, Rial and García, 2003). Finally, Oliver (1993) defines satisfaction as an answer or post-consumption assessment produced by affective and cognitive factors.

The last area of analysis of the questionnaire is the corresponding to perceived value. This concept is the least studied and worked until now (Duque, 2005). The perceived value is defined as the result of the comparison by the consumer of the perceived benefits and sacrifices (McDougall y Levesque, 2000), having been understood as a direct mediator in the satisfaction of sport services (Murray and Howat, 2002), while having influence on the client's attitude (Swait and Sweeney, 2000), being confirmed the positive influence of the perceived value on the loyalty towards the organization that provides the received services (Lewis and Soureli, 2006; McDougall and Levesque, 2000). Despite the importance of this concept, there is a controversy regarding its measurement (Martín, Barroso and Martín, 2004) and there are two different stances. On the one hand we find multi-items scales (Blackwell, Szeinbach, Barnes, Garner and Bush, 1999; Cronin, Brady and Hult, 2000; Dodds, Monroe and Grewal, 1991; Grewal, Krishnan, Baker and Borin, 1998; Naylor and Frank, 2000; Sweeney, Soutar and Johnson, 1999) and on the other hand we find instruments with only one item (Bolton and Drew, 1991; Caruana, Money and Berthon, 2000; Cronin, Brady, Brand, Hightower and Shemwell, 1997; Kerin, Jain and Howard, 1992; McDougall and Levesque, 2000; Oh, 1999; Sirohi, Mclaughlin and Wittink, 1998).

The importance of this new instrument (EPOD2) lie in joining three different constructs that are interrelated and that have a great significance for understanding the future behaviour of the service users, having been shown that the service quality, satisfaction and the service value together directly affects the users' behaviour, and that there is a relationship between the assessment and the loyalty to the service (Brady, Knight, Cronin, Tomas, Hult y Keillor, 2005).

EPOD2 intends to be an easy to use tool for the organizations, providing relevant information for them while complying with the properties that any measuring instrument may have. Therefore, the aim of this study is to validate the instrument, reducing the number of items that compose it and verifying the

reliability of this instrument as a means of assessment of the sport services, organizations, perceived quality, satisfaction and service value.

METHOD

Participants

The participants in this study were 1471 users of sports services in Andalusia, randomly selected from 46 different organizations (32.60% public and 67.40% private), being 61.60% men and 38.40% women, with an average age of 26.46 \pm 13.54 years.

Instrument

For data collection a questionnaire, which consisted of 34 items of Likert alternative response, was used, ranging from 1 (Strongly disagree) to 5 (Strongly agree), with different areas of assessment:

1. Perceived quality (28 items)
2. Satisfaction (5 items)
3. Service value (1 item)

The questions regarding perceived quality belong to the questionnaire EPOD (Nuviala, Tamayo, Iranzo y Falcón, 2008), excluding the item " You are satisfied with the quality/price of the activity.", which was used to measure the service value, as it was previously done by Murray and Howat (2002) in a study on this subject in sport services. McDougall and Levesque (2000) have argued and validated the possibility of using only one item to measure this concept.

To assess satisfaction we have used a scale consisting of five items designed by Oliver (1980) and used in several studies like the one by Bodet (2006).

Procedure

The field work was carried out through a self-administered questionnaire being the interviewer present. Participants were asked to fill it in and to ask any doubt they may have about the items. The time spent in its completion was about 15 minutes. Before data collection, permission was asked to the people in charge of the different organizations that participated in the study. Likewise, all the users voluntarily agreed to participate in the study.

RESULTS

Statistical analysis of the items

Table 1 shows the descriptive statistics of the items, both regarding the scale of perceived quality and satisfaction. It can be seen, in general, that except for the items of the satisfaction scale, the skewness and kurtosis rates are close to zero and below the value 1.96, indicating similarity to the standard curve. These results allow the use of the factor techniques that we will use later on. The reliability of the perceived quality scale evaluated with Cronbach's alpha is .918, the internal consistency of the satisfaction scale is .842.

Table 1. Means (*M*), Standard deviation (*S.D.*), Skewness, Kurtosis, item-total correlation (*R IT-c*) and alpha if an item is removed (*α without item*).

| | <i>M</i> | <i>S.D.</i> | Skewness | Kurtosis | <i>R IT-c</i> | <i>α without item</i> |
|--|----------|-------------|----------|----------|---------------|-----------------------|
| Service perceived quality | | | | | | |
| 1.The teacher is respectful of the schedule. | 4.1946 | .92902 | -.963 | .236 | .527 | .915 |
| 2. I am happy with the treatment by the monitor. | 4.1412 | .95864 | -1.015 | .587 | .542 | .914 |
| 3. You believe the instructor provides an adequate attention to the problems of the users-students from day one. | 4.0246 | .97629 | -.757 | -.066 | .578 | .914 |
| 4. You believe that the instructor adapts the classes to the interests-needs of the users-students | 4.0103 | .99278 | -.739 | -.152 | .561 | .914 |
| 5. You believe that the instructor encourages the group sufficiently. | 4.1329 | .90734 | -.841 | .261 | .543 | .915 |
| 6. You perceive that the instructor has well planned classes. | 4.0700 | .92834 | -.651 | -.436 | .568 | .914 |
| 7. The changing rooms are sufficiently clean. | 3.6891 | 1.10931 | -.535 | -.462 | .472 | .916 |
| 8. The changing rooms are wide enough. | 3.5323 | 1.17578 | -.310 | -.923 | .455 | .916 |
| 9. The facilities are sufficiently clean. | 3.7906 | 1.00119 | -.488 | -.408 | .507 | .915 |
| 10. The temperature is the adequate. | 3.7245 | 1.06631 | -.418 | -.660 | .487 | .915 |
| 11. There is sufficient material for the lessons. | 3.8376 | 1.01598 | -.606 | -.274 | .526 | .915 |
| 12. The material is in perfect condition for use. | 4.0020 | .96644 | -.629 | -.385 | .582 | .914 |
| 13. The material is modern. | 3.7335 | 1.05068 | -.385 | -.730 | .571 | .914 |
| 14. The safety of the facility is appropriate. | 3.8904 | 1.01672 | -.653 | -.236 | .490 | .915 |
| 15. The range of activities is updated. | 3.4786 | 1.13422 | -.291 | -.677 | .519 | .915 |
| 16. The activity is enjoyable. | 4.1574 | .82916 | -.610 | -.363 | .554 | .915 |
| 17. The tasks carried out in the classroom are varied enough. | 3.8986 | .95519 | -.587 | -.153 | .536 | .915 |
| 18. The timetable is convenient for users. | 4.0504 | .92885 | -.656 | -.315 | .415 | .916 |
| 19. The activities end at the time indicated. | 4.1697 | .89166 | -.812 | -.130 | .601 | .914 |
| 20. I am informed on the benefits of this activity. | 3.7955 | 1.07370 | -.517 | -.572 | .452 | .919 |
| 21. With this activity I get the results expected. | 4.0879 | .86961 | -.538 | -.548 | .598 | .914 |
| 22. The facilities have some means to convey suggestions (Suggestion box, bulletin board). | 3.2522 | 1.28596 | -.151 | -1.027 | .409 | .917 |
| 23. The information on the activities taking place in the centre is adequate. | 3.7090 | 1.04945 | -.359 | -.744 | .490 | .915 |
| 24. It has been easy to join in the activity I participate. | 4.1782 | .92777 | -.857 | -.132 | .568 | .914 |
| 25. The service staff is there when needed and always willing to help. | 3.9307 | 1.47056 | 1.507 | 3.004 | .424 | .918 |

| | | | | | | |
|---|--------|---------|--------|-------|------|------|
| 26. The staff of the facilities is friendly. | 4.0544 | .95677 | -.781 | .033 | .591 | .914 |
| 27. There is good relationship between the staff of the facility.. | 3.9538 | 1.00233 | -.650 | -.310 | .531 | .915 |
| 28. Your relationship with the group is friendly. | 4.3184 | .79582 | -.893 | .093 | .457 | .916 |
| Satisfaction | | | | | | |
| 29. I am satisfied about having enrolled/registered in this organization. | 4.2857 | .81064 | -.819 | -.193 | .335 | .862 |
| 30. Choosing this organization has been a good decision. | 4.1841 | .94323 | -1.195 | 1.334 | .790 | .766 |
| 31. I agree with having enrolled/registered in this organization. | 4.5561 | .80268 | -1.554 | 1.737 | .652 | .809 |
| 32. I had a good idea when deciding on joining sport activities in this organization. | 4.1578 | .92191 | -1.163 | 1.441 | .751 | .779 |
| 33. I am pleased for having enrolled in this activity. | 4.5806 | .81825 | -1.718 | 1.360 | .618 | .817 |
| Value | | | | | | |
| 34. You are satisfied with the relation quality/price of the activity. | 3.8061 | 1.07934 | -.515 | -.631 | | |

Internal structure analysis

To determine the factor structure of the perceive quality scale, we conducted an exploratory factor analysis on the 28 items resulting from the statistical analysis of the items by means of the principal components extraction method and then Varimax rotation. Before performing the analysis, we calculated the Kaiser-Meyer- Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity. The KMO index showed a value of .935 and Bartlett's test was statistically significant ($\chi^2_{378} = 16000,161$; $p < .001$), which led to the conclusion that the application of the factor analysis was relevant. The resulting dimensional structure consists of six factors (technicians, service personnel, communication, activity, material and facilities) which together accounted for 58.03% of the variance (Table 2).

The same procedure was performed for the four items resulting from the analysis of the satisfaction scale having been eliminated item 29 since the corrected item-total correlation generates values lower than .35 and shall be discarded (Cohen and Manion, 2002). The KMO index showed a value of .735 and Bartlett's test was statistically significant ($\chi^2_6 = 3121,167$; $p < .001$), which led to the conclusion that the application of the factor analysis was relevant. The resulting dimensional structure is formed by only one factor that explains 70.89% of the variance.

Table 2. Factor rotation structure, communalities, eigenvalues, Cronbach's alpha and percent of variance explained by each factor.

| | 1 | 2 | 3 | 4 | 5 | 6 | Extraction |
|--|-------|-------|-------|-------|-------|-------|------------|
| 1. The teacher is respectful of the schedule. | .624 | | | | | | .580 |
| 2. I am happy with the treatment by the monitor. | .684 | | | | | | .631 |
| 3. You believe the instructor provides an adequate attention to the problems of the users-students from day one. | .675 | | | | | | .613 |
| 4. You believe that the instructor adapts the classes to the interests-needs of the users-students. | .710 | | | | | | .596 |
| 5. You believe that the instructor encourages the group sufficiently. | .675 | | | | | | .578 |
| 6. You perceive that the instructor has well planned classes. | .632 | | | | | | .553 |
| 15. The range of activities is updated. | | .601 | | | | | .624 |
| 20. I am informed on the benefits of this activity. | | .629 | | | | | .566 |
| 22. The facilities have some means to convey suggestions (Suggestion box, bulletin board). | | .816 | | | | | .721 |
| 23. The information on the activities taking place in the centre is adequate. | | .703 | | | | | .629 |
| 16. The activity is enjoyable. | | | .526 | | | | .506 |
| 17. The tasks carried out in the classroom are varied enough. | | | .518 | | | | .533 |
| 18. The timetable is convenient for users. | | | .593 | | | | .430 |
| 19. The activities end at the time indicated. | | | .415 | | | | .478 |
| 21. With this activity I get the results expected. | | | .385 | | | | .495 |
| 24. It has been easy to join in the activity I participate. | | | .501 | | | | .481 |
| 28. Your relationship with the group is friendly. | | | .687 | | | | .536 |
| 10. The temperature is the adequate. | | | | .656 | | | .548 |
| 11. There is sufficient material for the lessons. | | | | .627 | | | .609 |
| 12. The material is in perfect condition for use. | | | | .616 | | | .619 |
| 13. The material is modern. | | | | .578 | | | .576 |
| 14. The safety of the facility is appropriate. | | | | | .574 | | .617 |
| 25. The service staff is there when needed and always willing to help. | | | | | .553 | | .420 |
| 26. The staff of the facilities is friendly. | | | | | .626 | | .621 |
| 27. There is good relationship between the staff of the facility. | | | | | .701 | | .637 |
| 7. The changing rooms are sufficiently clean. | | | | | | .790 | .736 |
| 8. The changing rooms are wide enough. | | | | | | .726 | .645 |
| 9. The facilities are sufficiently clean. | | | | | | .713 | .674 |
| % Explained variance | 32.35 | 7.941 | 5.939 | 4.500 | 3.718 | 3.584 | 58.039 |
| Eigenvalue | 9.060 | 2.223 | 1.663 | 1.260 | 1.041 | 1.004 | |
| Cronbach's alpha | .837 | .754 | .795 | .757 | .704 | .768 | .918 |

Confirmatory factor analysis

To verify that the scale follows the expected factor structure, a confirmatory factor analysis was carried out by means of AMOS 16 software. 350 subjects from the original sample of 1471 were selected, to prevent on the one hand over-adjustment of the data and on the other hand to obtain a critical sample size (Gondar, 2002).

The parameters were determined using the maximum likelihood method. To assess the adequacy of the models tested (model extracted from the exploratory factor analysis and resulting model after following the guidelines of the modification indices proposed by the statistical program) we opted for the joint assessment of a group of indices. Table 3 collects the information provided by the fit indices used: RMR (*Root Mean Square Residual*), RMSEA (*Root Mean Square Error of Approximation*), GFI (*Goodness of fit index*) IFI (*incremental fit index*), TLI (*Tucker-Lewis index*), CFI (*Comparative Fit Index*), χ^2 (chi square), df (degrees of freedom) and the ratio χ^2/df .

The results of the perceived quality scale, both from the model extracted of the exploratory factor analysis and from the modified model, consisting of 6 factors and 20 items can be seen in Table 3.

Table 3. Adjustment and error indicators of the confirmatory factor analysis

| | RMR | RMSEA | GFI | IFI | TLI | CFI | χ^2 | Df | χ^2/df |
|----------------|------|-------|------|------|------|------|----------|-----|-------------|
| EFA model | .064 | .067 | .845 | .863 | .844 | .862 | 866.706 | 335 | 2.58 |
| Modified model | .052 | .058 | .915 | .931 | .914 | .930 | 338,7 | 155 | 2,18 |

The results for the satisfaction scale resulting from the extracted model of the exploratory factor analysis consisting of one factor and 4 items can be seen in Table 4.

Table 4. Adjustment and error indicators of the confirmatory factor analysis

| | RMR | RMSEA | GFI | IFI | TLI | CFI | χ^2 | Df | χ^2/df |
|-----------|------|-------|------|------|------|------|----------|----|-------------|
| EFA model | .056 | .026 | .981 | .999 | .988 | .999 | 1,233 | 1 | 1,23 |

Reliability Analysis

The reliability of the resulting instrument that studies the perceived quality is .898. For the resulting factors it ranges from .793 (technicians) and .735 (service staff). The reliability for the satisfaction scale is .862 (Table 5).

Convergent validity

The convergent validity was calculated by Pearson's correlation coefficients between the score of the service perceived quality, satisfaction and the service value. The result shows a significant correlation among the variables demonstrating the existence of this type of validity (Table 5).

Table 5. Factors, items by factor, means and standard deviation. Correlations between the EPOD2 factors and internal consistency (on the diagonal)

| Factor | Items | M | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|-------------------|-------|-----------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1. Technicians | 2 | 4,07±.75 | (.793) | ,530** | ,283** | ,612** | ,405** | ,413** | ,298** | ,413** |
| | 3 | | | | | | | | | |
| | 4 | | | | | | | | | |
| | 5 | | | | | | | | | |
| 2. Services Pers. | 26 | 4,00±.87 | | (.735) | ,277** | ,538** | ,342** | ,374** | ,210** | ,481** |
| | 27 | | | | | | | | | |
| 3. Communicac. | 15 | 3,47±.94 | | | (.742) | ,501** | ,551** | ,322** | ,049 | ,285** |
| | 22 | | | | | | | | | |
| | 23 | | | | | | | | | |
| 4. Activity | 16 | 4,09±.64 | | | | (.768) | ,544** | ,389** | ,347** | ,545** |
| | 17 | | | | | | | | | |
| | 19 | | | | | | | | | |
| | 21 | | | | | | | | | |
| 5. Material | 24 | 3,85±.84 | | | | | (.788) | ,442** | ,157** | ,288** |
| | 11 | | | | | | | | | |
| | 12 | | | | | | | | | |
| 6. Facilities | 13 | 3,67±.90 | | | | | | (.768) | ,195** | ,337** |
| | 7 | | | | | | | | | |
| | 8 | | | | | | | | | |
| 7. Satisfaction | 9 | 4,36±.73 | | | | | | | (.862) | ,258** |
| | 30 | | | | | | | | | |
| | 31 | | | | | | | | | |
| | 32 | | | | | | | | | |
| 8. Value | 33 | 3,80±1.07 | | | | | | | | |
| | 34 | | | | | | | | | |

** Significant correlation at level $p < .01$ (bilateral).

Cross-validation

To demonstrate the cross-validation of the instrument, the found factor structure has been analyzed in a different population, 326 users and players of football schools. The results obtained in both scales show excellent adjustment indices, except for the chi-square coefficient divided by the degrees of freedom of the satisfaction scale (Table 6).

Table 6. Adjustment and error indicators of the confirmatory factor analysis

| | RMR | RMSEA | GFI | IFI | TLI | CFI | χ^2 | Df | χ^2/df |
|-------------------|------|-------|------|------|------|------|----------|-----|-------------|
| Perceived quality | .060 | .061 | .901 | .933 | .917 | .932 | 340.730 | 155 | 2.198 |
| Satisfaction | .068 | .076 | .986 | .988 | .963 | .998 | 12,851 | 2 | 6.426 |

DISCUSSION

The results of this study support the validity and reliability of EPOD2 as a suitable instrument for application. For this, the construction method established

by Carretero-Dios and Pérez (2005) was followed. After the preparation of the items by qualitative procedures, the statistical analysis of the scale items was carried out. The criterion to keep an item was a value greater than or equal to .35 in the coefficient of the corrected item-total correlation (Cohen y Manion, 2002). Item 29 was removed from the satisfaction scale (Oliver, 1980), since it had a coefficient of item-total correlation less than .35. The reliability was calculated using Cronbach's alpha index of internal consistency, showing that the removal of the item represented a slight increase in the internal consistency of the scale (.862) with the 4 remaining items.

Then we proceeded to assess the internal structure by an exploratory factor analysis. The rotation procedure used was Varimax, despite it is advised to be used in cases where the factors are not related. It was chosen because of the theoretical interest of separating the resulting factors as far as possible, despite stating the relationship between the factors. (Carretero-Dios y Pérez, 2007). The result on the perceived quality scale was the extraction of six factors explaining 58.03% of the variance. The original construct defended the idea of the six factors and the factor analysis extracted those six factors (technicians, service personnel, communication, activity, material and facilities) making it possible to check and reinforce the scale setup according to the initially proposed theoretical model. The internal consistency of each resulting factor was good, being its reliability between .704 and .837. The same process was carried out for the satisfaction scale and resulting from the extraction one factor that accounted for 70.89% of the variance.

A confirmatory factor analysis was carried out to verify the factor structure of the perceived quality and satisfaction scales. The parameters were determined using the maximum likelihood method. To assess the adequacy of the models tested (extracted model from the exploratory factor analysis and resulting model after following the guidelines of the modification indices proposed by the statistical program) we opted for the joint assessment of a group of indices. Some of the most commonly used fit indices were selected, being considered acceptable values above .90 in the case of GFI, IFI, TLI y CFI, ; between .05 y .08 in the case of RMR and RMSEA; and in the ratio between χ^2 and df , in a considered perfect model its value would be 1.00 and the ratios below 2.00 will be considered as indicators of a very good adjustment of the model, while values below 5.00 are considered acceptable (Hu y Bentler, 1999). The results obtained for the initial model, the extracted one from the exploratory factor analysis did not provide optimal results, so it was necessary to correct the model to achieve acceptable results. The final model also consisted of six dimensions and only 20 items, presenting correct fit indices in the case of the perceived quality scale. The fit indices resulting from the model of the analysis were correct in the satisfaction scale. In order to verify the proposed models, a confirmation on the two scales was carried out in a different population. The results are good except for the chi-square coefficient divided by the degrees of freedom that provided very high results in the satisfaction scale.

The convergent validity was determined by the correlations between the EPOD2 factors through the Pearson's coefficient. The correlations among them are positive, moderate and are significantly related, showing this type of validity, since the results tell us that they are similar constructs but conceptually different. Similarly and following Luque's criterion (2000), whereby none of the correlations is higher than 0.9, the existence of this type of validity is confirmed.

In conclusion, the results allow us to present a tool that assesses the perceived quality, satisfaction and perceived service value provided by the sport organizations simply and briefly, taking into account the different dimensions that make the provision of the sports services. After the confirmatory factor analyses, a reduced questionnaire consisting of 8 dimensions and 25 items was obtained, which represents a reduction of nearly 28% of the items and a hundredth loss in Cronbach's alpha coefficient (.02) in the perceived quality scale, a reduction of one item, and an increase of .02 in the reliability of the satisfaction scale. These results lead to the conclusion that it is a reliable and valid instrument, which confirms it as useful for management and research, with easy application, and can be used periodically by the people responsible of the organizations allowing the comparison among them.

REFERENCES

- Afthinos, Y., Theodorakis, N.D. y Nassis, P. (2005). Customer's expectations of service in Greek fitness centres. Gender, age, type of sport center, and motivation differences. *Managing Service Quality*, 15 (3), 245-258.
- Alexandris, K., Zahariadis, P., Tsorbatzoudis, C., Grouios, G. (2004). An empirical investigation of the relationships among service quality, customer satisfaction and psychological commitment in a health club context. *European Sport Management Quarterly*, 4, 36-52.
- Blackwell, S., Szeinbach, S., Barnes, J., Garner, D. y Bush, V. (1999). The antecedents of customer loyalty: an empirical investigation of the role of personal and situational aspects on repurchase decisions. *Journal of Service Research*, 1 (4), 362-375.
- Bodet, G. (2006). Investigating customer satisfaction in a health club context by an application of the tetraclasse model. *European Sport Management Quarterly*, 6 (2), 149-165.
- Bolton, R. y Drew, H. (1991). A Longitudinal Analysis of the Impact of Service Changes on Customer Attitudes. *Journal of Marketing*, 55, 1-9.
- Brady, M. y Cronin, J. (2001). Some new thoughts on conceptualising perceived service quality: a hierarchical approach. *Journal of Marketing*, (65) 3, 34-49.
- Brady, M., Knight, G.A., Cronin, J., Hult, G. y Keillor, B. (2005). Removing the Contextual Lens: A Multinational, Multi-Setting Comparison of Service Evaluation Models. *Journal of Retailing*, 81 (3), 215-230.
- Calabuig, F., Burillo, P., Crespo, J., Mundina, J.J. y Gallardo, L. (2010). Satisfacción, calidad y valor percibido en espectadores de atletismo. *Revista Internacional de Medicina y Ciencias de la Actividad Física y el Deporte*, 10 (40), 577-593
- Calabuig, F., Quintanilla, I. y Mundina, J. (2008). La calidad percibida de los servicios deportivos: diferencias según instalación, género, edad y tipo de usuario en servicios náuticos. *Revista Internacional de Ciencias del Deporte*, 10, 25-43.
- Carretero-Dios, H. y Pérez, C. (2005). Normas para el desarrollo y revisión de estudios instrumentales. *International Journal of Clinical Health Psychology*, 5 (3), 521-551.
- Carretero-Dios, H. y Pérez, C. (2007). Standards for the development and the review of instrumental studies: Considerations about test selection in psychological research. *International Journal of Clinical Health Psychology*, 7, 863-882.
- Caruana, A., Money, A. H. y Berthon, P. R. (2000). Service quality and satisfaction-the moderating role of value. *European Journal of Marketing*, 34 (11/12), 1338-1353.
- Cohen, L. y Manion, L. (2002). *Métodos de Investigación Educativa*. Madrid: La Muralla.

- Cronin, J. J., Brady, M., Brand, R., Hightower, R. y Shemwell, D. (1997). A cross-sectional test of the effect and conceptualization of service value. *The Journal of Service Marketing*, 11 (6), 375-391.
- Cronin, J. J., Brady, M. K. y Hult, G. T. M. (2000). Assessing the effects of quality, value and customer satisfaction on consumer behavioural intentions in service environments. *Journal of Retailing*, 76, (2), 193-218.
- Dodds, W., Monroe, K. y Grewal, D. (1991). Effects of price, brand, and store information on buyers' product evaluations. *Journal of Marketing Research*, 28, 307-19.
- Duque, E.J. (2005). Revisión del concepto de calidad del servicio y sus modelos de medición. *Innovar*, 15 (25), 64-80.
- Gondar, J.E. (2002). *Modelado de ecuaciones Estructurales*. Madrid: DMI.
- Grewal, D., Krishnan, R., Baker, J. y Borin, N. (1998). The effect of store name, brand name and price discounts on consumers' evaluations and purchase intentions. *Journal of Retailing*, 74 (3), 331-352.
- Hu, L. y Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6 (1), 1-55.
- Kerin, R., Jain, A. y Howard, D. (1992). Store shopping experience and consumer price-quality value perceptions. *Journal of Retailing*, 68 (4), 376-398.
- Kim, D., y Kim, S.Y. (1995). QUESC: an instrument for assessing service quality in sports and leisure centres. *Managing Leisure*, 1, 77-89.
- Kouthouris, C. y Alexandris, K. (2005). Can service quality predict customer satisfaction and behavioral intentions in the sport tourism industry? An application of the SERVQUAL model in an outdoors setting. *Journal of Sport & Tourism*, 10 (2), 101 - 111.
- Lewis, B.R. y Soureli, M. (2006). The antecedents of consumer loyalty in retail banking. *Journal of Consumer Behaviour*, 5 (1), 15-31.
- Luque, T. (2000). *Técnicas de análisis de datos en investigación de mercados*. Madrid: Pirámide.
- Mañas, M. A., Jiménez, G., Muyor, J. M., Martínez, V. y Moliner C. P. (2008). Los tangibles como predictores de la satisfacción del usuario en servicios deportivos. *Psicothema*, 20 (2), 243-248.
- Martín, D., Barroso, C. y Martín, E. (2004). El valor percibido de un servicio. *Revista Española de Investigación de Marketing ESIC*, 8 (1), 47-71
- Martínez, J.A. y Martínez, L. (2009). La calidad percibida en servicios deportivos; mapas conceptuales de marca. *Revista Internacional de Medicina y Ciencias de la Actividad Física y el Deporte*, 9 (35), 232-253.
- Martínez-Tur, V., García-Buades, E., Marzo, J.C. y Gosálvez, I. (1998). El nivel de saturación de las instalaciones deportivas como atributo situacional y variable de la calidad: sus relaciones con la satisfacción de los usuarios. *Revista de Psicología del deporte*, 7 (13), 135-146.
- Martínez-Tur, V., Peiró, J.M., Ramos, J. y Tordera, N. (2000). Contribución de la Psicología social al estudio de la satisfacción de los usuarios y consumidores. *Revista de Psicología Social*, 15, 5-24.

- Marzo, J.C., Martínez-Tur, V., Ramos, J. y Peiró, J. (2002). La satisfacción del usuario desde el modelo de la confirmación de expectativas. Respuestas a algunos interrogantes. *Psicothema*, 14, 765-770.
- McDougall, G.H., y Levesque, T. (2000). Customer satisfaction with service: Putting perceived value into the equation. *Journal of Services Marketing*, 14 (5), 392-410.
- Morales, V., Hernández-Mendo, A. y Blanco, A. (2005). Evaluación de la calidad de los programas de Actividad Física. *Psicothema*, 17, 311-317.
- Murray, D. y Howat, G. (2002). The Relationships among Service Quality, Value, Satisfaction, and Future Intentions of Customers at an Australian Sports and Leisure Centre. *Sport Management Review*, 5, 25-43.
- Naylor, G. y Frank, K. (2000). The impact of retail sales force responsiveness on consumers' perceptions of value. *Journal of Services Marketing*, 14 (4), 270-281.
- Nuviala, A., Tamayo, J. Iranzo, J. y Falcón, D. (2008) Creación, diseño, validación y puesta en práctica de un instrumento de medición de la satisfacción de usuarios de organizaciones que prestan servicios deportivos. *Retos. Nuevas tendencias en Educación Física, Deporte y Recreación*, 14, 10-16.
- Oh, H. (1999) Service quality, customer satisfaction, and customer value: A holistic perspective. *International Journal of Hospitality Management*, 18 (1), 67-82.
- Oliver, R.L. (1980). A cognitive model of the antecedents and consequences of satisfaction decisions. *Journal of Marketing Research*, 17, 460-469.
- Oliver, R.L. (1993). A conceptual model of service quality and service satisfaction: compatible goals, different concepts. *Advances in Services Marketing and Management*, 2, 65-85.
- Rial, J., Varela, J., Rial, A., Real, E. (2010). Modelización y medida de la Calidad Percibida en centros deportivos: la escala QSport-10. *Revista Internacional de Ciencias del Deporte*, 18 (6), 57-73.
- Sanz, I., Redondo, J.C., Gutierrez, P. y Cuadrado, G. (2005). La satisfacción en los practicantes de spinning: Elaboración de una escala para su medición. *Motricidad European Journal of Human Movement*, 13, 17-36.
- Sirohi, N., Mclaughlin, E. W. y Wittink, D. R. (1998). A model of consumer perceptions and store loyalty intentions for a supermarket retailer. *Journal of retailing*, 74 (2), 223-245.
- Swait, J. y Sweeney, J.C. (2000). Perceived value and its impact on choice behavior in a retail setting. *Journal of Retailing and Consumer Services*, 7 (2), 77-88.
- Sweeney, J., Soutar, G. y Johnson, L. W. (1999). The role of perceived risk in the qualityvalue relationship: a study in a retail environment. *Journal of Retailing*, 75 (1), 77-105.
- Varela, J., Rial, A. y García, E. (2003). Presentación de una Escala de Satisfacción con los Servicios Sanitarios de Atención Primaria. *Psicothema*, 15 (4), 656-661.

Westerbeek, H. M. y Shilbury, D. (2003). A conceptual model for sport services marketing research: integrating quality, value and satisfaction. *International Journal of Sport Marketing & Sponsorship*, 5 (1), 11-31.

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ANNEX. Final Instrument

P. 1. How would you rate the following aspects in relation to the monitor/ coach you have in your sports centre?

| | Strongly disagree | Disagree | Agree | Somewhat agree | Strongly agree |
|---|-------------------|----------|-------|----------------|----------------|
| I am happy with the treatment received from the monitor/coach | 1 | 2 | 3 | 4 | 5 |
| I think he pays an adequate attention to the users' problems from day one. | 1 | 2 | 3 | 4 | 5 |
| I think the monitor adapt classes/training to the customers' interests-needs. | 1 | 2 | 3 | 4 | 5 |
| I consider that the monitor/coach encourages the group enough. | 1 | 2 | 3 | 4 | 5 |

P. 2. As regards **facilities**, what is your opinion on the following elements?

| | Strongly | Disagree | Agree | Somewhat | Strongly |
|-------|----------|----------|-------|----------|----------|
| _____ | | | | | |

| | disagree | | | agree | agree |
|---|----------|---|---|-------|-------|
| The changing rooms are sufficiently clean | 1 | 2 | 3 | 4 | 5 |
| The changing rooms are wide enough | 1 | 2 | 3 | 4 | 5 |
| The facilities are clean enough | 1 | 2 | 3 | 4 | 5 |

P. 3. Regarding **sport material**, what is your opinion on the following elements?

| | Strongly disagree | Disagree | Agree | Somewhat agree | Strongly agree |
|--|-------------------|----------|-------|----------------|----------------|
| Sufficient material is available for training. | 1 | 2 | 3 | 4 | 5 |
| The material is in good condition for its use. | 1 | 2 | 3 | 4 | 5 |
| The material is modern | 1 | 2 | 3 | 4 | 5 |

P. 4. To what extent are the **activities** performed conformed to the following statements?

| | Strongly disagree | Disagree | Agree | Somewhat agree | Strongly agree |
|--|-------------------|----------|-------|----------------|----------------|
| The activity is enjoyable. | 1 | 2 | 3 | 4 | 5 |
| The tasks carried out in training/sessions are diverse enough. | 1 | 2 | 3 | 4 | 5 |
| The activities end at the time indicated. | 1 | 2 | 3 | 4 | 5 |
| With this activity I get the results expected. | 1 | 2 | 3 | 4 | 5 |
| I found easy to join the activity on which I participate. | 1 | 2 | 3 | 4 | 5 |

P. 5. As a user of this facility, what is your perception on the following aspects of communication?

| | Strongly disagree | Disagree | Agree | Somewhat agree | Strongly agree |
|---|-------------------|----------|-------|----------------|----------------|
| The facilities have some means to convey suggestions (suggestion box, bulletin board) | 1 | 2 | 3 | 4 | 5 |
| The information on the activities offered in the center is adequate. | 1 | 2 | 3 | 4 | 5 |
| The range of activities is constantly updated. | 1 | 2 | 3 | 4 | 5 |

P. 6. The **personnel of the facilities** are a key element, what is your perception on the following aspects?

| | Strongly disagree | Disagree | Agree | Somewhat agree | Strongly agree |
|---|-------------------|----------|-------|----------------|----------------|
| The personnel is friendly. | 1 | 2 | 3 | 4 | 5 |
| There is a good relationship among the personnel of the facility. | 1 | 2 | 3 | 4 | 5 |

P. 7. We would like to know your satisfaction in relation to the organization and the activity you perform

| | Strongly disagree | Disagree | Agree | Somewhat agree | Strongly agree |
|--|-------------------|----------|-------|----------------|----------------|
| Choosing this club has been a good decision. | 1 | 2 | 3 | 4 | 5 |
| I am satisfied at having joined the club. | 1 | 2 | 3 | 4 | 5 |
| It was a good decision to engage in sport activities in this club. | 1 | 2 | 3 | 4 | 5 |
| I am pleased to be enrolled in this club. | 1 | 2 | 3 | 4 | 5 |

P. 8. Express your degree of agreement with this statement

| | Strongly disagree | Disagree | Agree | Somewhat agree | Strongly agree |
|---|-------------------|----------|-------|----------------|----------------|
| I am satisfied with the relation quality/price of the activity. | 1 | 2 | 3 | 4 | 5 |