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Experience Quality Scale for Fitness Centers (EQSFC): Validity and Reliability Study

Authors' contribution:
A) conception and design of the study
B) acquisition of data
C) analysis and interpretation of data
D) manuscript preparation
E) obtaining funding

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Abstract

This study aimed to develop a valid and reliable tool for measuring the perceptions of quality of experience for fitness center members. The research was conducted with two different sample groups who are current members of fitness centers. A total of 317 (141 females, 176 males) fitness center members volunteered to participate in the explanatory and confirmatory factor analysis survey, and 250 (102 females, 148 males) fitness center members volunteered to participate in the criterion-dependent validity survey. For the validity and reliability studies for the scale, explanatory factor analysis, confirmatory factor analysis, criterion-dependent validity, Cronbach's alpha internal consistency, and composite reliability were used. As a result of the exploratory factor analysis conducted to indicate the structural validity of the scale, a five-factor scale with 17 items included in i) communication quality, ii) physical environment quality, iii) outcome quality, iv) access quality, and v) entertainment quality was identified, explaining 63% of the total variance. According to the analysis results for criterion-related validity, a statistically significant positive relationship was detected between communication quality (r=.422, p<.001), physical environment quality (r=.582, p<.001), outcome quality (r=.597, p<.001), access quality (r=.458, p<.001), entertainment quality (r=.697, p<.001) and satisfaction. The results indicate that the scale can be used as a valid and reliable tool to measure the quality of experience perceived by individuals concerning the fitness center where they are members. In addition, it is thought that this scale, which details the factors that influence the customer experience in fitness centers for the first time, will provide an important contribution to the literature.

Keywords: customer experience, fitness center, scale development, fitness consumer, sports management.

Introduction

With an increasing awareness about the importance of healthy living, the global fitness industry is growing rapidly. Deloitte (2022) stated that, compared to the previous year, the number of fitness center members fell by 15% during the COVID-19 epidemic, when health clubs were closed. In spite of this, it is one of the rare sectors that has experienced stable growth over the last decade (Kercher et al., 2023). Deloitte (2023) has confirmed that the number of fitness center members has now reached 63.1 million, an increase of 12.3% on the previous year, and has predicted that fitness market income is €28.0 billion annually. Moreover, the number of fitness centers in Europe has risen to 63 830, an increase of +0.5% compared to the previous year (Deloitte, 2023). The same

growth rate is found in the fitness market in Türkiye (Eskiler & Altunışık, 2021). IHRSA (2022) emphasized that Russia, Poland and Türkiye have the greatest potential for growth. According to Deloitte (2019), Türkiye is one of the countries with greatest increase in customer numbers in the European fitness market (2017 1.83 million customers; 2018 1.95 million customers; 2019 2.1 million customers). Türkiye has 2555 fitness centers (Deloitte, 2022; Sevilmiş & Şirin, 2022). In spite of this stable growth, the centers face a serious problem in the form of abandoned memberships (Gallardo et al., 2016). Studies show that the number of members ending their membership within the first six months has reached serious dimensions (Gjestvang et al., 2020; Matsumoto & Tekenaka, 2004). Only 30% of members and 60% of memberships are extend for more than one year (MacIntosh & Law, 2015). However, as the length of membership increases, the rate of ending memberships falls. According to researchers, fitness center members who keep their membership for more than six months sustain their memberships and display loyalty to the fitness center (Clavel San Emeterio et al., 2019; MacIntosh & Law, 2015). Here, the quality of experience leading to outcomes like values, satisfaction and behavioral intentions may play a key role in reducing the non-renewal of memberships among fitness center members. However, when the relevant literature is investigated, though many researchers (Çevik & Şimşek, 2020; Sevilmiş et al., 2022b; Yoshida, 2017) accept the importance of service quality in sports management research, there is limited understanding of the holistic consumer experience that includes the various interactions of active sports consumers (Yoshida, 2017).

Experience quality is accepted as one of the basic factors shaping the perceptions of value (Suhartanto et al., 2020), satisfaction (Wu & Ai, 2016) and behavioral intent (Chen & Chen, 2010) of customers. At this point, it is very important to create experiential environments in fitness services that are difficult to imitate, difficult to substitute, desired by consumers and meet consumer expectations in terms of competitive advantage (Eskiler & Safak, 2022). This is because fitness services are seen as experiential consumption on a large scale, like other leisure activities (golf, tourism). When assessed, this reveals the importance of understanding and developing experience within the sports industry in general and the fitness industry in particular. After investigating the literature, it is possible to say that measurement tools determining experience quality are still in the process of development (Çevik & Şimşek, 2020). The lack of a scale tool in the fitness sector, sustaining stable growth, represents an obstacle to understanding the experience perceptions and outputs for fitness center members at present. Though some research in the sports management field (Yoshida, 2017) emphasized which dimensions and subdimensions are included within consumer experience, there is no empirically confirmed valid and reliable scale of the dimensions of consumer experience in the context of fitness centers. As a result, this study aimed to develop a comprehensive scale reflecting the experiential quality dimensions for fitness centers.

This research examines experience quality in five sub-dimensions that include emotional cues to the perception of objects or individuals in the environment related to the actual functioning of both the product and the service. When the related literature is examined, there are adaptation studies on experience quality, but there is no scale development study in the context of fitness services. This scale development study includes different dimensions of experience quality (rational, sensory), such as physical environment, individuals' emotions, communication with organizational employees and what they get from the product (output). It is thought that the consumer experience is improved in the context of fitness services by considering the role of emotions in the evaluation of experience quality and the technical and functional characteristics of the service; in other words, how the service is provided and what is obtained from this service. It is thought that new models and studies that will be designed as a result of evaluating these five dimensions will provide a better understanding of experience quality and make important contributions to the missing fitness literature in this context.

Literature Review

Experience Quality

Customer experience is conceptualized as the subjective response of the customer to all direct and indirect encounters with the organization, and the experiential quality, perceived excellence or superiority for the customer (Lemke et al., 2011). Experience quality may be defined as emotional decisions perceived about experiences lived by the customer (Chang & Horng, 2010). It is also closely related to the meaning a customer attaches to a situation; in other words, it is the consumer's evaluation of the experience in emotional terms (Chen & Chen, 2010; Mao et al., 2023). Considered within this framework, experiential quality is defined as a psychological outcome attributed to service activities by participating customers (Cole & Scott, 2004).

In the context of fitness services, service quality refers to service performance at the quality level, while experiential quality refers to the psychological outcome of fitness members' participation in fitness activities (Mao et al., 2023). Experience quality scales differ from perceived quality scales in that the sub-dimensions represented have a point of contact and the evaluation expresses a psycho-

logical outcome. While tools that measure service quality focus on the functional features and benefits that products and services provide to customers, measurement tools that focus on customer experiences reveal the psychological outcome of a holistic approach.

Stated differently, emotions and feelings play roles in the assessment of experience quality. As a result, tools measuring experience quality focus on the need to avoid ignoring the hedonic aspect of the experience quality (Fernandes & Cruz, 2016; Otto & Ritchie, 1996). At the same time, experience quality may display differences according to whether the sports customer is an active or passive participant, since these are experiences involving different mental aspects (Çevik & Şimşek, 2020; Perić, 2010; Jeon et al., 2021). In the context of fitness center members, different mental aspects may be involved. For example, though two different customers participate in the same training program by buying the same service, they may have different experiences. The reason for this is that every member is unique. Each member brings different history, values, attitudes and beliefs to the situation; stated differently, members experience things from their own personal viewpoints (García-Pascual et al., 2023; Mao et al., 2023).

One aspect of experience is related to the true operation of an item or service. The second aspect comprises emotional clues perceived by emotions and spread by objects or people in the environment. Examples include the music played in the fitness center, the smiles of the trainer or personnel, and communication (Chang & Horng, 2010). Based on the relevant literature, this research accepted that experiential quality in fitness centers provided by active participation comprises the dimensions of communication quality, physical setting quality, outcome quality, access quality and entertainment quality (Baena-Arroyo et al., 2020; Eskiler & Safak, 2022; García-Pascual et al., 2023; Jeon et al., 2021). The reasons these dimensions of experience quality should be included within the scale during this scale development study are given below.

Dimensions of Experience Quality

Considering the literature, researchers have identified many constructs for measuring service experience quality (Fernandes & Cruz, 2016). The basic feature of a comprehensive scale tool is that it should have dimensions that match the consumer's response to all direct and indirect encounters with the business.

Otto and Ritchie (1996), who first defined experiential quality, included hedonism, peace of mind, participation, and recognition as dimensions of experience quality. Chang and Horng (2010) included the dimensions of physical environment, the customer themselves, service providers, other customers and customer companies in their experiential quality scale. De Rojas and Camarero (2008) included communication, physical environment and outcome quality as dimensions in research about experience quality.

Studies by Wu and Ai (2016), Wu et al. (2016), Wu and Li, (2017), and Wu et al. (2018) summarized the five sub-dimensions of experiential quality: communication quality, physical environment quality, access quality, entertainment quality and outcome quality. In this research, the factors of experience quality adopted were physical environment quality, communication quality, access quality, entertainment quality and outcome quality by considering the dominant service characteristic traits of sports and tourism research with similar features (Wu & Ai, 2016; Wu et al., 2016; Wu & Li, 2017; Wu et al., 2018) and research assessing experiential quality in the context of sport (Çevik & Şimşek, 2020; Eskiler & Safak, 2022; Wang et al., 2021). The reason for adapting these factors is that, considering the concept of experience in the context of fitness members, the service that a fitness center member receives during their time at the fitness center can be expressed by the logical and emotional acquisitions of the individual under the headings of quality of physical environment, quality of communication, quality of transportation, quality of entertainment and quality of output.

Physical Environment Quality

Physical environment quality represents the visible physical facilities, like the equipment and building, offered to fitness members where service is provided, contrary to natural or social surroundings (AbouRokbah & Salam, 2023; Alnawas & Hemsley-Brown, 2019). In the scale development study, this factor was recommended for adoption in several structural models and appears to be a dimension of experiential quality in other developed tools (Wu & Ai, 2016; Wu et al., 2016; Wu & Li, 2017; Wu et al., 2018; Wang et al., 2021).

Communication Quality

Interactions are qualified as being common experiences between people providing and receiving services (Prahalad & Ramaswamy, 2004, p.7). How the service is presented may be called interaction quality (Brady & Cronin, 2001). Especially in fitness centers, communication is an important factor that determines the quality of the center during service consumption (Sevilmiş et al., 2022). The communication area of fitness center members includes communication with fitness center trainers and other employees. The trainer's communication with the member takes place within the framework of the trainer's technical (professional), social and listening skills. In other words, the fact that the trainer welcomes a member with a smile and uses his/her professional experience for the member's benefit can be shown as an example of

good communication between the trainer and the member (Glaveli et. al., 2023). Several studies attempting to understand the process of experience quality saw communication quality as an experience quality (Wu et al., 2016; Wu, 2017; Wu & Ai 2016; Wu et al., 2018a).

Outcome Quality

Many researchers have underlined outcome quality as a factor for assessment of experience quality perceptions (Klaus & Maklan, 2012; Wang et al., 2021). As in all sectors, all customer movements are entirely based on a rational and cognitive process in the fitness sector (Foroughi et al., 2019). Fitness center members use their past, present and future experiences to determine behavioral intentions (Eskiler & Safak, 2022). Accordingly, it is a rational act that fitness members assessing information base their evaluation on outputs in terms of their expectations. Outcome quality emphasizes the results obtained from fitness services (Foroughi et al., 2019). Fitness club members obtain membership of fitness centers to achieve their sporting goals (García-Pascual et al., 2023). As a result, the technical quality features in the fitness service experience. In other words, what they obtain from the service is considered a component of experience quality (Klaus & Maklan, 2012).

Access Quality

The response of a business to indirect encounters with the customer is an important element for conceptualizing customer experience (Wang et al., 2021). One of these indirect encounters is the journey to the fitness center. Transport problems experienced with increasing populations, particularly in metropolitan cities, appear to be a factor affecting customers' selection of fitness centers. Stated differently, a factor used for assessment of the service experience of individuals appears to be fitness centers that are easy to access without traffic problems, located at a central point or close to the work or home of the customer. Access quality represents the ease of accessibility to the business providing the fitness service (Zopiatis et al., 2017). Many researchers have underlined that access quality is a factor used to assess the perceptions of experience quality (Eskiler & Safak, 2022; Knutson et al., 2007).

Entertainment Quality

Entertainment quality emphasizes the hedonic dimension of experience quality. Some research in the literature has emphasized the importance of hedonic elements (fantasies, emotions, entertainment) in the assessment of experience quality (Holbrook & Hirschman, 1982, p. 92). When considered in this context, it can be said that hedonic elements are the nature of the sports industry and especially the fitness industry, because fantasies, emotions and entertainment constitute the essence of sports services (Çevik & Şimşek, 2020; Yoshida et al., 2023). Entertainment quality is defined as the degree to which the quality of an experience ensures that potential customers feel comfortable, satisfied and even wonderful (Kao et al., 2008). This dimension comprises the basis of several experience quality scales (Çevik & Şimşek, 2020; Kim et al., 2012). The summarized literature studies show that fitness center experience quality can be examined in five sub-dimensions. Accordingly, this study aims to develop the Experience Quality Scale for Fitness Centers.

Material and Methods
Scale Development Process

Item Development

To develop a valid scale form, a comprehensive literature screening was first performed. This screening comprised the general conceptual framework of the study and forms an important basis for identifying the items to be included on the scale (Petrick, 2002). Previous research has identified possible sub-factors of the experience quality scale for fitness centers. As much as possible, all possible sub-factors were based on a sub-dimension of experiential quality in the context of fitness centers. To be able to create a comprehensive measurement tool reflecting experience quality in fitness centers, scales with validity and reliability in the field of sports (Çevik & Şimşek, 2020; Wang et al., 2021; Wu & Cheng, 2016) and in the field of tourism, where service is the dominant characteristic (Alnawas & Hemsley-Brown, 2019), were investigated and included in an item pool. When selecting items, care was taken that items were plain and understandable, and did not include more than one judgment or thought.

When experience quality measurement tools are investigated in both the service sector and sports sector, it can be said that experience quality has five factors of communication quality: physical environment quality, outcome quality, access quality and entertainment quality. When these factors are assessed in the context of fitness services, all factors have a feature that may be associated with them (Eskiler & Safak, 2022; García-Pascual et al., 2023). As a result of the literature review, 19 items representing communication quality, physical environment quality, outcome quality, access quality and entertainment quality were created.

In general, the dominant characteristic of all of these factors is that they are dimensions of experience quality in service sectors like tourism and specifically for fitness services in the sports sector with passive consumption (Çevik & Şimşek, 2020; Eskiler & Safak, 2022; Jeon et al., 2021; Yoshida, 2017). When creating the scale items,

studies by various researchers were used (Alnawas & Hemsley-Brown, 2019; Çevik & Şimşek, 2020; Dias et al., 2019; Eskiler & Safak, 2022; Kao et al., 2008; Wu & Cheng, 2016; Zopiatis et al., 2017).

Translation Method

If the scale items are taken from a source in a different language during the scale development process, it is important to translate them from the source language into the target language (Beaton et al., 2000). The origin language for the items in the item pool was English. Translation of the scale items from English to Turkish followed the five-stage process proposed by Sinaiko & Brislin (1973). These stages are initial translation, evaluation of initial translation, re-translation, assessment of re-translation and expert opinion.

Certain criteria were observed when creating the initial translation group. Some of these criteria were: knowing the source language of English and target language of Turkish well, working in the field of sports science, and performing studies related to scale development. In this process, translations were completed independently by two experts and these translations were assessed. This assessment was compared by an expert in English, and the translations best representing the items were accepted. The translated items were then re-translated back into English. Comparisons in terms of word meaning and concepts were made between the English and Turkish forms and the decision was made about the final Turkish version. A pilot study began for items in the item pool. A fifteen-person group completed the draft application and assessed this application in terms of understandability of items. After the pilot application, the item pool contained a total of 19 items representing communication quality, physical environment quality, outcome quality, access quality and entertainment quality. After this, the data collection process for validity and reliability studies began.

Participants

Data for the research were collected from five different fitness centers with the same service quality features (minimum 2000 members, offering cardio, strength and group training, minimum 10 employees). Data were collected in İstanbul, the most crowded city in Türkiye, located on the Asian and European coasts of the Bosporus. During the collection stage, care was taken to collect data from fitness club members who were able to assess elements related to experience quality. In this context, the research did not include fitness club members with membership durations of less than six months. Two different data sets were collected in the context of the research. The first data set was used for exploratory (EFA) and confirmatory factor analysis (CFA), while the second data set was used for criterion-dependent validity. The details of the two data sets are given in Table 1.

For exploratory and confirmatory factor analysis, data were collected from 317 members, while for criterion-dependent validity, data were collected from 250 members. In the context of the research, the personal traits of 317 members providing data for EFA and CFA were as follows: 44.5% of members participating in the research were women (141) and 55.5% were men (176). 67.5% of participants were single (214) and 32.5% were married (103). Among participants, 23.9% had high-school

Table 1. Demographic characteristics

		EFA and CFA		Criterion-dependent validity	
Variables	**Category**	**N**	**Percentage**	**N**	**Percentage**
Gender	Woman	141	44.5	102	40.8
	Man	176	55.5	148	59.2
Marital status	Single	214	67.5	174	69.6
	Married	103	32.5	76	30.4
Educational level	High school	76	23.9	28	11.2
	Undergraduate	193	60.9	189	75.6
	Postgraduate	48	15.1	33	13.2
Income status	Low	120	37.9	113	45.2
	High	197	62.1	137	54.8
Duration of membership	7-12	135	42.6	138	55.2
	13-18	42	13.2	29	11.6
	19-24	39	12.3	12	8.8
	25 months or longer	101	31.9	71	28.4
Total		**317**	**100%**	**250**	**100%**

education (76), 60.9% had undergraduate education (193) and 15.1% had postgraduate education (48). In terms of income, 37.9% had a low income (120) and 62.1% had a high income (197). Considering length of membership, 42.6% were members for 7–12 months (135), 13.2% for 13–18 months (42), 12.3% for 19–24 months (39) and 31.9% for 25 months or longer (101).

The personal characteristics of the 250 fitness club members providing data for criterion-dependent validity are as follows: 40.8% were women (102) and 59.2% were men (148). 69.6% of participants were single (174) and 30.4% were married (76). In terms of education, 11.2% had a high-school degree (28), 75.6% had an undergraduate degree (189) and 13.2% had a postgraduate degree (33). Among the participants, 45.2% had a low income (113) and 54.8% had a high income (137). Considering the duration of membership, 55.2% were members for 7–12 months, 11.6% were members for 13–18 months (29), 8.8% were members for 19–24 months and 28.4% were members for 25 months or more (71).

Data Analysis

Exploratory factor analysis aims to determine the most appropriate number of factors and to reveal whether the measured variables (items) are reasonable indicators of a variety of latent dimensions (Brown, 2015). Confirmatory factor analysis tests whether a hypothetical factor structure fits the covariance structure observed for the measured variables (Floyd & Widaman, 1995; Jöreskog & Sörbom, 1993). Cattell (2012) showed that 200 participants was adequate for factor analysis studies. Items created for experience quality had a 5-point Likert rating for response structures from "definitely disagree (l)" to "definitely agree (5)". Before collecting data for EFA, CFA and criterion validity, 15 draft surveys were completed. The decision was made to collect data for EFA and CFA with the draft survey containing 19 items. After reaching 317 participants, data classification was carried out using the SPSS program.

Firstly, EFA was applied for construct validity. Before completing EFA, the data set was investigated in terms of whether it was suitable for factor analysis. With this aim, the Kaiser-Mayer-Olkin (KMO) value and Bartlett test were examined. The KMO value was .81 and the Bartlett test was statistically significant, indicating that the data were suitable for exploratory factor analysis (Çokluk et al., 2012). The factor extraction methods vary depending on the aim of the research, model used and data set. Principal axis factoring was chosen as the extraction technique. This factor extraction technique is used to obtain solutions based on a theoretical construct. When determining the number of factors, the criteria of the eigenvalue being larger than 1 was chosen. Due to this prediction about the scale factors being associated with each other, the Quartimax rotation technique is used in EFA. Due to the high item-scale correlations and alpha coefficients during analyses, the decision was made to use Quartimax rotation from the oblique rotation methods, as correlations between factors were considered to better reveal the distribution of factor loads (Akbulut, 2010). At this stage, two items were eliminated as they did not have an adequate factor load (lower than .40). After supporting the factor structure obtained with EFA, confirmatory factor analysis was applied to provide proof of the construct validity of the scale. Confirmatory factor analysis was performed with the licensed version of LISREL 8.80. Before proceeding to CFA analysis, it was checked whether all items could be explained under one factor. For this purpose, the single-factor structure ($\chi 2 = 960.13$; df = 135; RMSEA =0.139; CFI = .78; IFI = .79 and NFI = .76) and the five-factor structure ($\chi 2 = 253.13$; df = 109; RMSEA = 0.065; CFI = .96; IFI = .96 NFI = .93 and NNFI: .94) proposed in the study were compared with the help of CFA analysis. The five-factor structure of the 17 items remaining after EFA was tested. This method is an estimation method that chooses the most probable parameters (Rossi, 2018). For CFA, the absolute fit indices ($\chi 2$/sd), parsimony fit indices (RMSEA) and comparative fit indices (CFI, NFI, NNFI, RFI) were assessed.

The criterion-dependent validity of the scale was then evaluated. Criterion-dependent validity is the validity obtained by calculating the correlation between the estimated score obtained from the scale and the criterion known to measure the trait to be measured. In this context, a separate data set (N=250) was collected after confirmatory factor analysis. Five fitness centers used for EFA and CFA were reached for data collection. Satisfaction items were taken from studies on fitness centers (Çevik & Sevilmiş, 2022; García-Fernández et al., 2018; Şirin et al., 2023).

Criterion dependent validity was analyzed with the SPSS program. In this context, the relationship between each sub-dimension of quality of experience and satisfaction was analyzed using Pearson product moment correlation analysis. The findings were correlated with the findings in the literature.

Results

Exploratory Factor Analysis

To investigate the construct validity of the scale, EFA was used to investigate whether there were significant correlations by examining the correlation matrix for all items. Before completing basic components analysis, the KMO and Bartlett test results were investigated. The KMO value was .81, while the Bartlett sphericity test result was significant ($p<.01$). This result indicated that the correlation matrix was suitable; in other words, there was an adequate level of correlation to be able to perform

factor analysis between variables (Field, 2013). Items with low factor loads (<.40) were removed from the scale. These items were in the physical environment quality factor: *the design of the fitness center is perfect* and in the entertainment quality factor: *I think I am motivated when doing sports in the center.* After this process, the 19-item experience quality scale had 17 items remaining. The values obtained during the process of EFA are given in Table 2.

Table 2. Exploratory factor analysis

Subdimension	Item	Statement	Factor loads	Eigenvalue	Explained variance	Measurement scale and literature sources
Communication Quality (CQ)	CQ1	Communication with fitness center staff is perfect.	.55	5.243	27.596	Eskiler & Safak, (2022); Wu & Cheng, (2018).
	CQ2	Fitness center staff show special interest in me.	.83			
	CQ3	Communication with trainers is perfect.	.80			
Physical Environment Quality (PEQ)	PEQ1	Changing rooms are adequate.	.79	2.287	13.615	Wang et al., (2021)
	PEQ2	Exercise tools and equipment are adequate.	.83			
	PEQ3	Exercise tools and equipment are modern.	.65			
Outcome quality (OQ)	OQ1	I feel I have done a good thing for myself after doing sports in this center.	.76	2.027	10.670	Eskiler & Safak, (2022); Wu & Cheng, (2018)
	OQ2	I feel healthier after doing sports in this center.	.71			
	OQ3	I think I have achieved my reason for joining after doing sports in this center.	.63			
	OQ4	Positive changes have occurred in my life since doing sports in this center.	.60			
Access quality (AQ)	AQ1	The fitness center is in an easily accessible location.	.53	1.152	6.064	Wang et al., (2021); Çevik & Şimşek, (2020)
	AQ2	The fitness center has adequate parking.	.68			
	AQ3	The fitness center is located close to public transportation.	.76			
	AQ4	The fitness center is at a central point.	.68			
Entertainment quality (EQ)	EQ1	I have an efficient time when doing sports in this center.	.53	1.036	5.453	Wang et al., (2021); Hosany, & Witham, (2010)
	EQ2	I have fun when doing sports in this center.	.51			
	EQ3	I think I get pleasure from doing sports in this center.	.56			

Extraction Method: Principal Axis Factoring.
Rotation Method: Quartimax with Kaiser Normalization
*Note: item content is given in Appendix 1

As seen in Table 2, the 17 items on the Experience Quality Scale for Fitness Centers had a fixed structure comprising five factors. The scale factors were defined as: communication quality, physical environment quality, outcome quality, access quality and entertainment quality. These factors explained 27.59%, 13.61%, 10.67%, 6.06% and 5.45% of the total variance, respectively. The five factors explained 63.399% of the total variance. The item factor loads varied from .51 to .83. These findings clearly show that the five-factor structure for the 17 items was supported.

Confirmatory Factor Analysis

After supporting the factor structure obtained in the first stage, confirmatory factor analysis was applied to provide evidence of the construct validity. The confirmatory factor analysis results related to the 17-item five-factor Experience Quality Scale for Fitness Centers are given in Figure 1.

Figure 1 shows the confirmatory factor analysis results for the Experience Quality Scale for Fitness Centers. According to standardized parameter (λ) estimations, the factor that each item belonged to had a load value above the .40 cut-off point and were significant (Hair, 2009). When the fit coefficients for the CFA results for the five-factor Experience Quality Scale for Fitness Centers are assessed, it appears the model had acgood fit to the data set. The χ^2/df value was above 2.32 ($\chi 2 = 253.13$, df=109, $p < .05$) indicating perfect fit (Anderson & Gerbing, 1984). At the same time, the RMSEA value was above .065, indicating fit of the parsimony fit index (Marsh & Hau, 1996). Additionally, the comparative fit indexes were CFI = .96; IFI = .96 NFI = .93 and NNFI: .94, indicating adequate fit (Marsh & Hau, 1996; Shevlin & Miles 1998). When the confirmatory factor analysis results are considered as a whole, they show the factor structure of the model was confirmed.

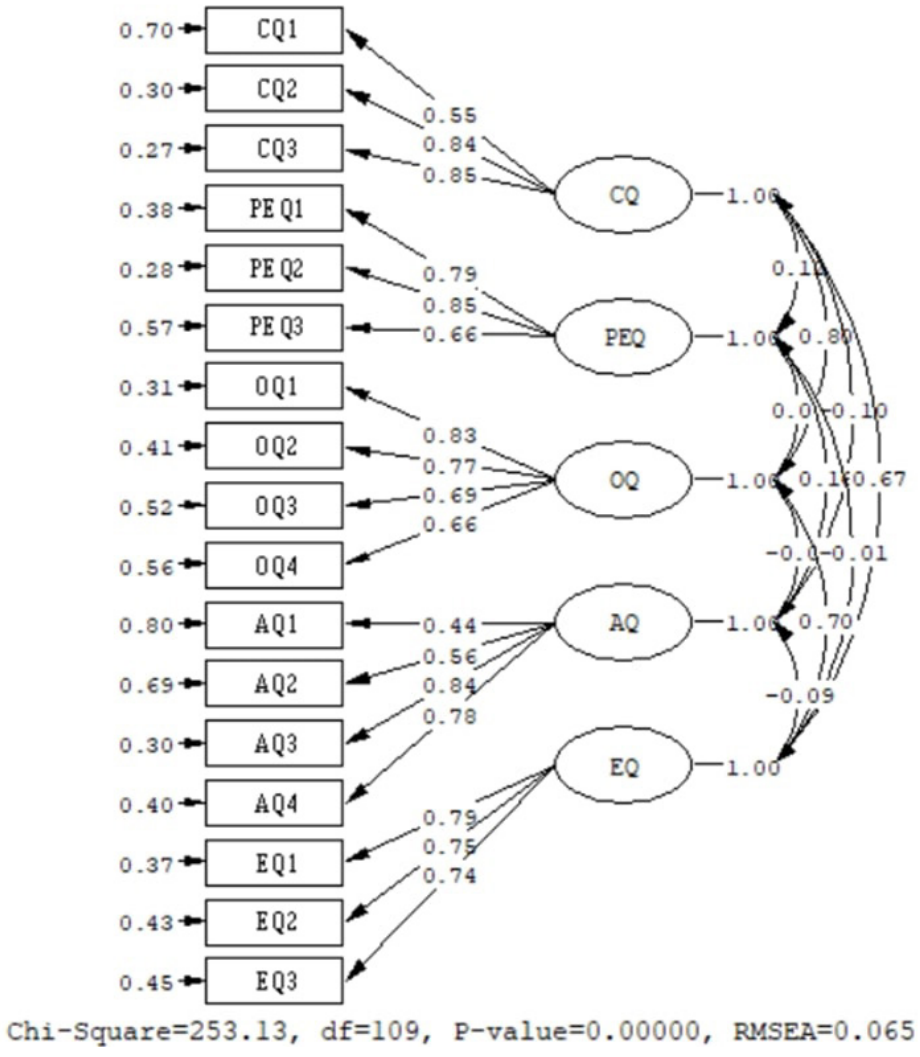

Figure 1. Confirmatory factor analysis

Convergent Validity

Data obtained from applying the Experience Quality Scale for Fitness Centers and average variance extracted (AVE) and structural reliability values obtained from analysis are presented in Table 3.

Fornell and Larcker (1981) proposed a technique founded on the AVE value obtained for each factor for convergent and divergent validity as a construct validity investigation method. Accordingly, they stated that the AVE value should be smaller than the internal consistency reliability (structural reliability) value for convergent validity, and each AVE value should be larger than .50. For the access quality factor in the Experience Quality Scale for Fitness Centers, the AVE value was identified as .46. Fornell and Larcker (1981) stated that the AVE value may be below .50 if the composite reliability (CR) coefficient is .70 or above. At the same time, the Cronbach alpha (α) reliability coefficient was calculated to determine the reliability of the scale. If the Cronbach alpha value is larger than .70, it shows the scale has a high degree of reliability (Gadermann et al., 2012). If the CR value is above .70, it indicates that composite reliability is provided (Bacon et al., 1995).

Table 3. Convergent validity

Item	Factor load (λ)	λ^2	$1-\lambda^2$	Number of items	Total λ	Total λ^2	Total $1-\lambda^2$	$(\text{Total } \lambda)^2$	AVE	CR	CA
CQ1	.55	.302	.697								
CQ2	.84	.705	.294	3	2.28	1.8002	1.1998	5.1984	.60	.81	.82
CQ3	.85	.792	.207								
PEQ1	.79	.624	.375								
PEQ2	.85	.722	.277	3	2.30	1.7822	1.2178	5.2900	.59	.81	.82
PEQ3	.66	.435	.564								
OQ1	.83	.688	.311								
OQ2	.77	.592	.407	4	2.95	2.1935	1.8065	8.7025	.54	.82	.83
OQ3	.69	.476	.523								
OQ4	.66	.435	.564								
AQ1	.44	.193	.806								
AQ2	.56	.313	.686	4	2.62	1.8212	2.1788	6.8644	.46	.75	.76
AQ3	.84	.705	.294								
AQ4	.78	.608	.391								
EQ1	.79	.624	.375								
EQ2	.75	.562	.437	3	2.28	1.7342	1.2658	5.1984	.57	.80	.81
EQ3	.74	.547	.452								

Criterion-Dependent Validity

To assess the criterion-dependent validity of the scale, the Experience Quality Scale for Fitness Centers and Customer Satisfaction Scale were applied together to a different sample group and the Pearson multiplication moment correlation analysis was investigated. Table 4 presents the results related to criterion-dependent validity.

According to the Pearson correlation analysis conducted to evaluate the criterion-dependent validity of the scale, relationships were found between the sub-dimensions of fitness center experience quality and satisfaction. According to the results of the analysis, a significant, positive and high relationship was found between outcome quality ($r=.597$, $p<.001$), entertainment quality ($r=.697$, $p<.001$) and satisfaction. At the same time, a significant, positive, medium-level relationship was found between communication quality ($r=.422$, $p<.001$), physical environment quality ($r=.582$, $p<.001$), access quality ($r=.458$, $p<.001$) and satisfaction.

When the results are evaluated, the expected correlation between the sub-dimensions of fitness center experience quality and satisfaction is present when applied by creating a model, and this can be interpreted as evidence of criterion-dependent validity (Xue et al., 2023).

Table 4. Criterion-related validity

	S	CQ	PEQ	OQ	AQ	EQ
Satisfaction (S)	1					
Communication Quality (CQ)	.422**	1				
Physical Environment Quality (PEQ)	.582**	.312**	1			
Outcome quality (OQ)	.597**	.302**	.506**	1		
Access quality (AQ)	.458**	.406**	.450**	.376**	1	
Entertainment quality (EQ)	.679**	.348**	.423**	.640**	.404**	1

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

Discussion

It is a topic of scientific interest as to whether experience quality has a significant effect on the behavior of fitness club members (Eskiler & Safak, 2022). Considered in this context, the lack of a valid and reliable measurement tool for this essential concept in the fitness literature played a basic role in shaping this article. This research confirms the validity and reliability of the Experience Quality Scale for Fitness Centers for use in analyzing perceptions of fitness service users.

In the scale development stage, after deciding the scale would have a Likert-type rating, the relevant literature (Alnawas & Hemsley-Brown, 2019; Çevik & Şimşek, 2020; Dias et al., 2019; Eskiler & Safak, 2022; Jeon et al., 2021; Kao et al., 2008; Yoshida, 2017; Wu & Cheng, 2016; Zopiatis et al., 2017) was reviewed and an item pool was created. For the scientific suitability of this item pool, expert opinion was sought to ensure items were clear, necessary, understandable and specific. Initially, the draft scale was applied to a 15-person group and measurement performance was assessed in this context. In this process, revisions were made to some items.

The validity of the scale was examined in the stages following the draft application. Exploratory and confirmatory factor analysis was completed with a data set obtained from 317 people. EFA results identified a five-factor structure for the 17-item Experience Quality Scale for Fitness Centers. The scale factors were called: communication quality, physical environment quality, outcome quality, access quality and entertainment quality. The five-factor Experience Quality Scale for Fitness Centers explained 63.399% of the total variance. When EFA results were assessed, the first step for scale validity was completed. Later confirmatory factor analysis was performed to provide evidence of construct validity. When the fit coefficients were examined in CFA analysis results for the scale, it appeared the model provided a good fit to the data set. Later, the AVE and CR values were investigated for convergent and divergent validity and the Cronbach alpha value was investigated for internal consistency.

The AVE values for the communication quality, physical environment quality, outcome quality and entertainment quality sub-factors of the Experience Quality Scale for Fitness Centers were identified to be above .50. The AVE value for the access quality was identified as .46. Fornell and Larcker (1981) stated that if the CR coefficient is above .70, the AVE value may be below .50. The Cronbach alpha reliability coefficient value was identified to be higher than 0.7 in determining the reliability of the scale. This value being higher than .70 indicates high degree of reliability for the scale (Gadermann et al., 2012). At the same time, the CR value was higher than .70, indicating that composite reliability was present (Bacon et al., 1995).

Finally, criterion-dependent validity analysis revealed a significant positive correlation between communication quality, physical environment quality, output quality, access quality, entertainment quality and satisfaction. Many studies in the literature show parallels and/or partial parallels with our research (Cole & Chancellor, 2009; Wu et al., 2018; Yazıcı et al., 2017).

The finding of relationships between the sub-dimensions of experience quality and satisfaction can be interpreted as evidence of criterion-dependent validity (Xue et al., 2023). In conclusion, results obtained from validity and reliability studies show the five factors of the Experience Quality Scale for Fitness Centers have stable and consistent psychometric features.

Although research on quality of experience has become a popular research topic in the literature in recent years, research on quality of experience in fitness services is lacking. To the best of the researcher's knowledge, this study is the first study to validate the quality of experience scale in the context of fitness centers. In the fitness literature, scholars associate experience quality with pre-consumption, during consumption and post-consumption elements (Mao et al., 2023). Here, we are faced with the question of which elements the experience quality in fitness centers should include.

Fitness members view output quality (technical quality) and the quality of their interactions with service providers and other customers as part of their experience

(Eskiler & Safak, 2022). At the same time, fitness services should consider hedonic and emotionally motivating behaviors in the assessment of consumer behavior (Yoshida et al., 2023). This scale development study reveals that the experience of fitness members is not only related to dimensions such as the physical environment, but also the experience is related to pre-service (access quality), post-service (output quality) and hedonic elements.

Considering the fact that the fitness industry is a fast-growing sector and is highly competitive despite this growth, it is clear that more studies on consumer experience are needed (Eskiler & Safak, 2022; Mao et al., 2023;Yoshida et al., 2023).

Conclusions

Sports center management is based on knowing the perceptions of each customer attending the center, including their experiences (García-Pascual et al., 2023). This study confirms the validity and reliability of a five-factor comprehensive structural tool for experience quality in fitness services. The validity and reliability results provide evidence for the literature that may be developed into operating strategies in the context of experience quality by managers of fitness centers in particular.

Managerial implications

The validity and reliability of Experience Quality Scale for Fitness Centers (EQSFC) that can be used to measure the experience quality of members in fitness centers has been tested. The validity and reliability of this scale provides useful information on fitness management, and fitness center managers can use this scale as a data collection tool to determine the measures to be taken to improve members' perceptions of experience quality.

When tourism and fan studies are examined, the effect of experience quality on post-consumption behaviors has been determined (Çevik & Şimşek, 2020; Fernandes & Cruz, 2016; Wu & Cheng, 2018). In this context, fitness center managers can gain a stronger competitive position against other fitness clubs by understanding the impact of experience quality on post-consumption behaviors. This scale can contribute to the design of model research. If the experience quality scale, which is determined to be a valid and reliable measurement tool, is adapted in different countries, fitness center managers can use this adapted study in different cultures and samples and contribute to the fitness literature of different countries to improve the perceptions of experience quality

Limitations and Future Research

Although it contributes to the literature and fitness center management, this research has certain limitations due to uncertainties. Firstly, as a non-probability sample was used in the research, care should be taken when generalizing. Future researchers may use probability sampling methods.

Another limitation is that this scale was not previously used within the scope of fitness centers. When previous research findings are assessed, correlations are present between service experience perceptions with satisfaction, perceived value, loyalty and behavioral intent. Stated differently, it appears that service experience perceptions are a strong predictor of both the satisfaction and future intentions of service customers (Fernandes & Cruz, 2016; Çevik & Şimşek, 2020; Wu & Cheng, 2018). This framework was proven in the context of criterion-dependent validity in the research. Observing service experience perceptions is an important practice in the service sector, as it allows the possibility of understanding how fitness center customers experience and perceive the services offered. This may have significant practical results for sports services. In this context, future research may fill a gap in the literature by creating related or alternative structural models for consumer experience and value satisfaction.

When scale development research in alternative service studies is investigated, it may be said that experience quality includes different dimensions (Chang & Horng, 2010; Knutson et al., 2007). As a result, considering the five factors of experience quality included in this scale, these deficiencies may be noted in future scale development studies. Finally, service experience analysis may assist in developing effective marketing strategies for fitness businesses. The most practical way to analyze service experience is provided by the scale developed in this research. Results emerging due to measurement of customer experience perceptions of fitness businesses may play a key role in providing more positive experiences. In this way, fitness businesses may increase customer satisfaction and develop outcomes related to behavioral intentions, like re-purchasing and word-of-mouth marketing. In conclusion, solutions may be produced for the serious problem at fitness centers today of abandoned membership, in spite of the limitations of this measurement tool. Future research may use the Experience Quality Scale for Fitness Centers in different sectors (fitness, football, recreation, sporting products) and for different service types (sports tourism, etc.). In this context, future research will determine what sports consumers consider important (concrete products or abstract products), which will provide the opportunity to better understand the concept of experience in sports.

Competing interests

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