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Analysis of Selection Criteria and Alternatives to Renewing Membership in Fitness Centers Using an Analytical Hierarchy Process

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

The aim of the study was to determine the most suitable fitness center for members by using the Analytical Hierarchy Process (AHP) method, which identifies the criteria fitness members consider when choosing a fitness center. First, interviews were conducted with 20 fitness center members to determine the criteria. Then, the values obtained from the comparisons between the criteria, made by experts, were analyzed and evaluated using the AHP method. Eight criteria were determined: instructor qualification, interactions, cleaning, price, staff qualification, atmosphere, accessibility, equipment modernity and variety. Then alternatives to fitness centers were defined (low price, middle segment, premium) and a group of five experts was formed, consisting of members of various fitness centers and experts in sports sciences, and academics who conduct customer behavior research in fitness centers. Based on the opinions of experts, three alternatives and eight selection criteria were used in the evaluation. Alternatives are listed based on the findings. In the first phase of the study, weighting of the criteria and consistency calculations were performed, after which each criterion was weighted in relation to every alternative. As a result, the best alternative was calculated. According to the findings, price was determined to be the most important criteria in renewing fitness center membership, while premium fitness centers were determined to be the most important alternative. The research provides suggestions for reducing dropout rates and for the decision to renew memberships in fitness centers (such as flexible pricing, customer interaction, quality, and equipment modernity).

Keywords: multiple criteria decision-making, analytical hierarchy process, fitness centers, decision making, sports management, fitness industry

Introduction

In recent years, the fitness industry has been one of the industries experiencing consistent growth (Eskiler & Altunışık, 2021). The number of fitness members has increased in Turkey as well as globally. According to IHRSA (2022), Turkey is one of the countries with the highest rate of membership growth (1,830,000 in 2017; 1,950,000 in 2018; 2,100,000 in 2019). The number of fitness centers in the country is 2,555 (Deloitte, 2019; Sevilmiş & Şirin, 2022; Yıldız et al., 2021). Despite its steady growth, the fitness industry is characterized by easy termination of memberships (Gjestvang et al., 2020). Managers must develop an effective strategy focused on customer behavior in order for a center to achieve a competitive edge. This strategy may be intended to explain

why members renew their membership after the first year (Jang & Choi, 2018). In this context, making a purchase decision can be considered a key term. Decision making is an integral part of everyday life. People make decisions based on various factors in their private and social lives, business lives and many other areas (Lee & Ross, 2012). As a result of conflicting factors, the decision-making process is not simple. The decision-maker tries to make the most efficient decision by evaluating many factors, such as profitability, cost and time. The degree of importance of these evaluation factors varies depending on the goals of the decision-maker and the circumstances at hand.

Since customers have varying needs and expectations when considering the purchase of products and services, they base their decisions on the evaluation of various factors (Hwang & Won, 2008). This also applies to fitness center members. For this reason, it is thought that customers may have different preferences when choosing a fitness center and assigning different levels of importance to factors and/or criteria when becoming member of a fitness center. Multiple decision-making strategies help the decision-maker in the sports industry to make more reliable decisions in an environment of uncertainty (Chiu et al., 2010; Erturan-Ogut, Kula, 2022; Lee & Ross, 2012).

In the process of becoming a member of a fitness center, individuals evaluate the centers in a variety of ways to determine the one that suits them (Jang & Choi, 2018). An active vitamin bar, cleaning, opening and closing hours, equipment quality and variety, air conditioning, security of the fitness center, and the presence of a personal trainer are some of these (Çakir, 2018; Liao et al., 2018). In addition, the reasons for renewing membership in fitness centers are related to factors such as equipment, physical environment, membership fee, and accessibility (Jang & Choi, 2018).

As can be seen, the issue of "which center to become a member of" by evaluating the alternatives (low-priced, mid-segment and high-priced) that offer these criteria, where there are many criteria in fitness centers, remains a challenging, practical, and academic question. Little research has been conducted to determine the decision-making criteria (such as price, quality, distance, etc.) that fitness members consider when selecting a fitness center, as well as the fitness center that best meets these criteria. In this study, the Analytical Hierarchy Process (AHP) was used to determine the most suitable fitness center for fitness club members by identifying the criteria that members consider when choosing a fitness center. The aim of the study was to determine the most suitable fitness center for fitness members by using the Analytical Hierarchy Process (AHP) method, by identifying the criteria fitness members consider when choosing a fitness center.

Review of literature

The Analytical Hierarchical Process in sports and fitness centers

Decision-making involving multiple criteria is not an easy task, with different decision-makers having their own opinions and views on the criteria. Hence, many Multi Criteria Decision Making (MCDM) methods have been developed. One of these methods is the Analytic Hierarchy Process (AHP), which has been used in many different fields, such as marketing, education, health, sports (Kaur & Gupta, 2021). The Analytical Hierarchy Process is a method that answers the question "Which one will we choose?" or "Which is the best?" by choosing the best alternative that meets all the criteria of the decision-maker. The purpose of this method is to assist the decision-maker in making better decisions. AHP has become increasingly prevalent in the resolution of decision-making issues. It is a method that can be utilized for decision-making in service businesses in general (Kaur & Gupta, 2021) and in different research areas of sports businesses in particular (Lee & Ross, 2012).

In their study, Omürbek and Tüter (2020) examined the selection of ski equipment using AHP and identified factors such as brand and price as important factors. Yurttakalan and Yeşilyurt (2020) determined the length of the season as the reason for choosing the ski center. As can be seen, the AHP method has also been examined in the context of sports, with particular focus on facility preference criteria. For example, Liao et al. (2018) examined the location selection criteria for women's fitness centers using the AHP method, and determined that the region's female population density was the most important criterion for selection.

Criteria to selection a fitness center

Customer retention, in other words membership renewal (continuity), is directly related to the profitability of fitness centers (Kim & Byon, 2021). According to the relevant literature, there are particular reasons why members leave a fitness center or continue their membership. A consumer's decision to stay or leave is substantially dependent on the costs and benefits of the alternatives available in the market. Supposing that fitness members make a comparison between an existing service provider and a substitute, they choose to continue their membership if their fitness center provides better service, or switch to an alternative fitness center if it does not (Kim & Byon, 2021a; Yildiz et al., 2021). Studies on why members continue their memberships or switch to a different fitness center have reached particular conclusions.

Kim and Byon (2021a) specified the reasons for changing a fitness center as the absence of an alternative fitness center, lack of communication in the fitness center, lack

of employee relationships, lack of relationship with other members, poor location of the fitness center, unsuitable opening-closing hours of the center, and inadequate equipment. In other words, the deficiency of these elements was identified as the reason for terminating membership, and adequacy as the factor in continuing membership.

According to Yildiz et al. (2021), factors such as socialization, physical changes, location and transportation, security, customer orientation, and the fitness program are factors for female participants to prefer boutique gyms. Çakır (2018) determined the most significant criteria in the selection of a fitness center as the presence of a vitamin bar, hygiene, equipment, and membership fee. Jang and Choi (2018) classified the most important reasons for re-joining the fitness center as equipment, atmosphere, membership fee, and accessibility. Ong et al. (2021) investigated the reasons why fitness members prefer a fitness center during the COVID-19 epidemic and found that the most important reason was the price, followed by air-conditioning, service, trainer, and payment method. All of these studies draw attention to the importance of certain factors at fitness centers.

Despite the steady growth of the fitness industry (Kim et al., 2020), a major problem within the industry is membership termination (MacIntosh & Law, 2015; Kim & Byon, 2021b). Considering that there are many alternatives in the sector, the best alternative among all is missing in the literature. Therefore, it is crucial to determine the criteria for retaining fitness members and deciding the best fitness alternative, as it can mediate the reduction of the worrying phenomenon of membership termination. Concurrently, determining the reasons for members of fitness centers renewing their membership can play a crucial role in understanding the less loyal fitness member and ensuring sustainable financial performance (Kim & Byon, 2021b). The aim of this study, therefore, was to evaluate the criteria and alternatives that people who renew their fitness center memberships consider when making these choices.

Methods

AHP is a method that enables the determination of the best alternative by weighing many criteria and digitizing the data. In this study, the AHP method was used to evaluate the process of renewing membership by individuals of fitness centers. AHP consists of a series of stages, which include establishing a hierarchy, conducting pairwise comparisons, calculating the consistency ratio, and synthesizing the data. While determining the criteria and sub-criteria of the fitness center, studies in the literature (Jang & Choi, 2018) were determined by interviews (20 individuals who became members of a fitness center for the second time). The following criteria were determined as a result of the interviews: price, staff qualification (correspondence staff, cleaning and information staff), instructors' qualification, cleaning, interactions, atmosphere, equipment modernity, variety and accessibility. Literature justification was also sought for each of these criteria (Jang & Choi, 2018; Zarotis, 2018). Based on the literature, fitness center alternatives are determined as low-priced, mid-segment, or premium (Çevik & Sevilmis, 2022; García-Fernández et al., 2016; 2018a; 2018b; León-Quismondo et al., 2020). The necessary steps (Figure 1) were followed in the analysis of the selection criteria and alternatives for renewing membership at fitness centers using the analytical hierarchy process (AHP).

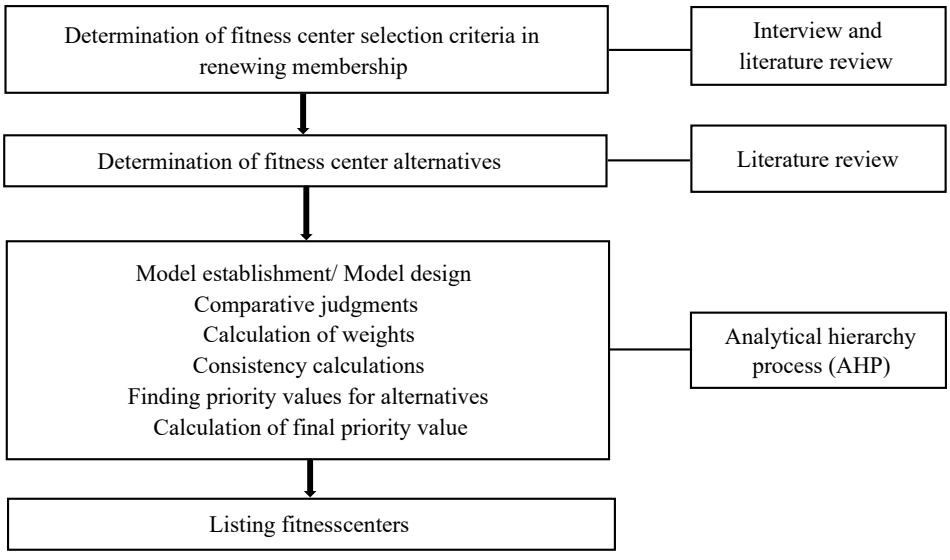


Figure 1. The processes conducted for the selected model (Lee & Ross, 2012).

The Analytical Hierarchy process (AHP) was used to achieve the purpose of this study, as seen in Figure 1. In the study, first of all, the reasons for renewing membership at a fitness center were defined by interviewing 20 people. During the selection process for (in-person) interviews, members who had renewed their membership as the same fitness center were identified. The purpose of the interviews, carried out by the researcher, was to ascertain those factors that contribute to a member joining a fitness facility for the second time. For the purpose of this study, the selection of 20 respondents was contingent upon their re-joining the same fitness center. The purpose of the investigation was determined with just one semi-structured question. MAXQDA software was used to analyze the qualitative data collected.

The views of 20 people were thematized by taking into account the literature, and these thematized elements were determined as the criteria for membership of the fitness center. At the stage of determining the alternatives, the fitness center alternatives mentioned in the literature were taken into account. Based on expert opinion, the criteria and alternatives were finalized and a total of eight criteria and three alternatives were used in the evaluation. In this way, the problem hierarchy (objective-criteria-alternatives) was created, after which the importance level of the criteria was calculated. Then the relationship matrices were normalized. Subsequently, the consistency calculation was made in order to make this comparison between the criteria consistent. In the last stage, the priority values of the criteria were the lowest. In the last stage, the priority values of the criteria were multiplied by the priority values of the alternatives and the priority value of each alternative was found. The criterion with the highest value and the alternative fitness center with the highest value were determined as the best alternative fitness center.

Finding priority values

After the consistency values have been adjusted to an acceptable level, the priority value of each alternative is calculated by multiplying the importance weights of the criteria by the importance weights of the alternatives. The sum of these values is equal to 1. The alternative with the highest value is the best choice for the decision problem.

Application. Determination of decision alternatives (identification of fitness centers)

Fitness centers are typically divided into two categories. This differentiation is primarily based on price and service variation. In this study, this already existing grouping for fitness centers was used as decision alternatives.

Table 1. Decision Alternative Pool

Rank	Alternative
1	Premium fitness centers
2	Low-cost fitness centers
3	Mid-segment fitness centers

Low-priced, mid-segment and high-priced fitness centers

The modern fitness industry has a multitude of selection criteria and alternatives. Examining the relevant literature, fitness centers are categorized as low-priced (Dias et al., 2019), middle-segment (León-Quismondo et al., 2020a), and premium (León-Quismondo et al., 2020b) fitness centers. Although inexpensive fitness centers are attractive in terms of price, they offer the fewest service opportunities (Tsitskari et al., 2021). These fitness centers have the highest global number of members, but the majority of low-priced fitness centers are used with an 'enter, work out, leave' logic (Piotrowski & Piotrowska, 2021). The so-called middle segment or consumer-price class consists of fitness businesses whose prices are frequently based on the average prices of their competitors. In principle, there cannot be a significant advantage here, as fitness centers in this category define their marketing strategy between "high-price class and discount-price class". They are managed without a differentiated, targeted approach (Bastos et al., 2021). The premium fitness center is distinguished by its consistently high-quality standards and its positioning of its fitness services at the highest price points (Weise, 2008). The quality mentioned is related to all processes of the service. In this case, customers pay a higher price for a better quality of service. Customers who go to these fitness centers also have a high social standing, and they can become members to receive prestige benefits. They use slogans such as "More quality, prestige, and status for the same price" to compete with other businesses in the first-class price unit. In addition to highlighting their superiority, they highlight the opportunities, products and services they provide (Lukito, 2016). In these fitness businesses, competition is determined by price (Sánchez & Ruiz, 2019). These gyms also vary from one another in terms of the cost of membership. Low-cost clubs are those with an average monthly charge of less than 30 €, mid-market clubs are those with an average monthly fee between 30 € and 65 €, and premium clubs are those with an average monthly membership fee of more than 65 € (Deloitte, 2019).

Results

Determination of criteria with interviews

In the study, 20 people (7 low-price customers, 7 middle-segment customers, and 6 premium customers) who

had been members of premium, medium-segment, or low-cost fitness centers for at least a year were asked whether they considered renewing their membership of this center. Half of the interviewees were female and half were male. On the basis of their responses, a pool of criteria was created.

The interviewees' responses were identified as criteria elements. In addition, it was examined whether the coding of the statements made during the interview existed in the literature. Consideration has been given to whether many of the criteria determined by the coding are used in the scientific literature to assess the quality of service in sports centers and fitness centers. Each interviewee has been a member of the fitness center for at least one year, who renewed their contract for the second time. Figure 2 illustrates the alternative criteria obtained through interviews.

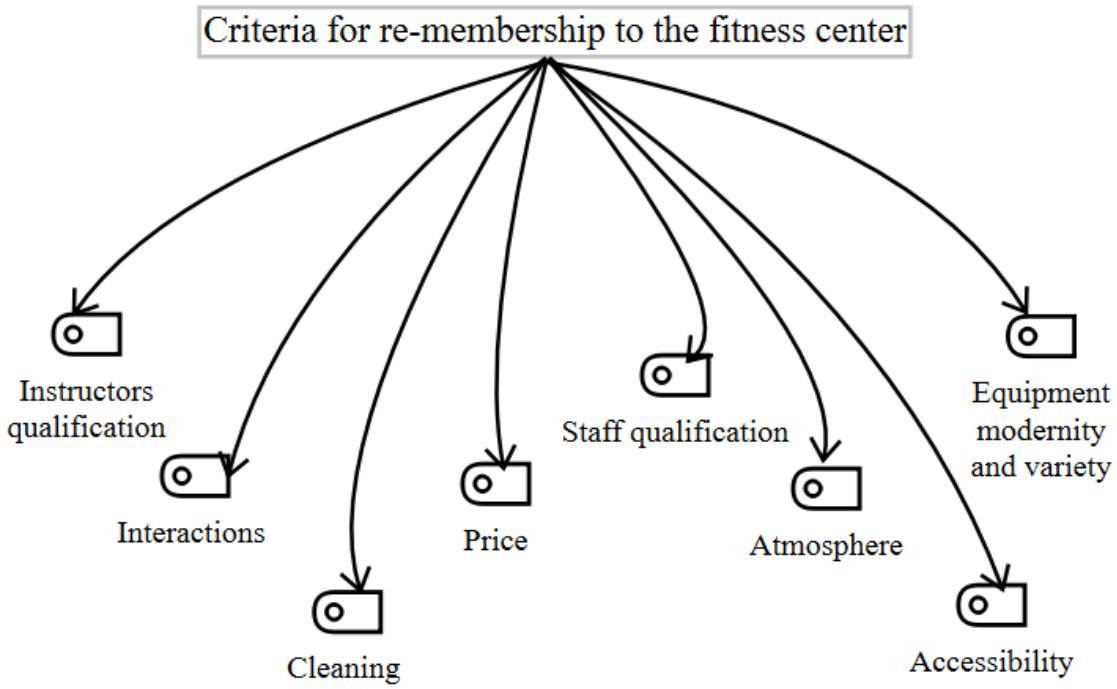


Figure 2. Criteria taken into account in renewing membership of the fitness center obtained through interviews.

1. Instructor qualification refers to the qualification of trainers in fitness centers.

2. Interactions refers to the communication established by the fitness center with its members.

3. Cleaning is the state of being clean for all areas of the fitness center wet (showers) and dry areas (training areas).

4. Price: It is the fee paid for the fitness center membership.

5. Staff qualification refers to the qualifications of the front office staff (correspondence officers, cleaning and advisory staff, managers, etc.).

6. Atmosphere refers to the lighting of the hall, the use of music, decorations, height, and the use of color.

7. Accessibility refers to the ability to access the fitness center as soon as possible.

8. Equipment modernity and variety is considered as having a sufficient amount of modern equipment in the fitness center.

Model establishment/ Model design

In the continuation of the study, a group of five experts was formed who were members of various fitness centers and experts in sports sciences, and academicians who conducted customer behavior research in fitness centers. After determining the evaluation criteria for the study, the model was developed. In creating the model, arrangements were made in accordance with the opinions of the experts. Due to the small number of criteria, there was no grouping. The model depicted below was arrived at, included eight criteria in total (Figure 3).

After the criteria were determined, pairwise comparison matrices were included for each criterion.

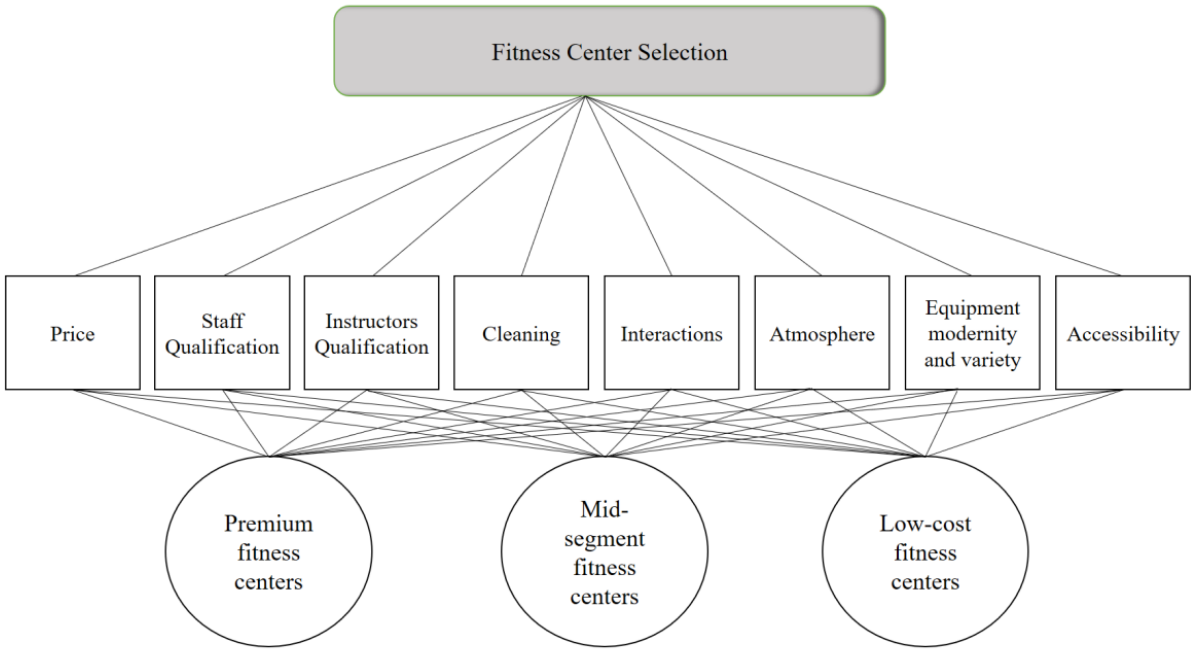


Figure 3. Research model (hierarchy created for the problem)

Making pairwise comparisons of criteria (comparative judgments)

The following comparison matrices were constructed based on the determined criteria.

Normalization of relationship matrices/ calculation of weights

After the pairwise comparisons, the process of normalization continued. In the process of normalization,

Table 2. Pairwise comparison matrix for criteria

	Price	**Staff qualification**	**- Instructors qualification**	**Cleaning**	**Interactions**	**Atmosphere**	**Equipment modernity and variety**	**Accessibility**
1- Price	1.00	6.00	3.00	5.00	2.00	4.00	3.00	5.00
2- Staff qualification	0.17	1.00	0.25	0.50	0.20	0.33	0.25	0.50
3- Instructors qualification	0.33	4.00	1.00	3.00	0.50	2.00	1.00	3.00
4- Cleaning	0.20	2.00	0.33	1.00	0.25	0.50	0.33	1.00
5- Interactions	0.50	5.00	2.00	4.00	1.00	3.00	2.00	4.00
6- Atmosphere	0.25	3.00	0.50	2.00	0.33	1.00	0.50	2.00
7- Equipment modernity and variety	0.33	4.00	1.00	3.00	0.50	2.00	1.00	3.00
8- Accessibility	0.20	2.00	0.33	1.00	0.25	0.50	0.33	1.00
Total	**2.98**	**27.00**	**8.41**	**19.50**	**5.03**	**13.33**	**8.41**	**19.50**

Table 3. Percentage weights of criteria

	Price	Staff qualification	Instructors qualification	Cleaning	Interactions	Atmosphere	Equipment modernity and variety	Accessibility	Priority value
1- Price	0.33	0.22	0.35	0.25	0.39	0.30	0.35	0.25	**0.31**
2- Staff qualification	0.05	0.03	0.02	0.02	0.03	0.02	0.02	0.02	0.03
3- Instructors qualification	0.11	0.14	0.11	0.15	0.09	0.15	0.11	0.15	0.13
4- Cleaning	0.06	0.07	0.03	0.05	0.04	0.03	0.03	0.05	0.05
5- Interactions	0.16	0.18	0.23	0.20	0.19	0.22	0.23	0.20	**0.20**
6- Atmosphere	0.08	0.11	0.05	0.10	0.06	0.07	0.05	0.10	0.08
7- Equipment modernity and variety	0.11	0.14	0.11	0.15	0.09	0.15	0.11	0.15	0.13
8- Accessibility	0.06	0.07	0.03	0.05	0.04	0.03	0.03	0.05	0.05
Total	1	1	1	1	1	1	1	1	

the cell values are divided by the sum of their matrix columns. Then the average of each row is used to calculate the priority values (PV) for each criterion.

When Table 3 is examined, it is seen that the priority values are listed for price (0.31), interactions (0.20), equipment modernity and instructor qualification (0.13), atmosphere (0.08), cleaning and location/accessibility (0.05), and finally staff qualification (0.03), respectively.

Consistency calculations

After determining the priority values, the consistency of this comparison between the criteria was evaluated. At this point, the weighted sum vector (WV) was found.

The values in the first row were multiplied by the corresponding values in the PV column. The obtained number was entered at the end of the first line in the WV cell. The values in the second row were multiplied with the respective values in the PV column, and the result was written in the second cell of the WV column. Thus, each criterion was calculated, and the WSV value for eight criteria was determined. The WSV value is then divided into priority values as shown in Table 4. The max value was determined by averaging the following results: After finding λmax, the consistency index (CI) was calculated. The consistency index was calculated as follows:

Table 4. WSV Value and Consistency Ratios

	Importance level	WSV	WSV/ Importance level
1- Price	0.31	2.56	8.25
2- Staff qualification	0.03	0.27	8.09
3- Instructors qualification	0.13	1.07	8.17
4- Cleaning	0.05	0.41	8.04
5- Interactions	0.20	1.71	8.25
6- Atmosphere	0.08	0.66	8.07
7- Equipment modernity and variety	0.13	1.07	8.17
8- Accessibility	0.05	0.41	8.04
λmax = 8.14; Consistency Index (CI)=0.02; Consistency Ratio (CR) =0.01 (CR ≤0.10 is consistent).			

Consistency index (CI)= (λmax-n) / (n-1)

CI = (8.140-8) / (8-1) = 0.02

After the CI was found, the consistency ratio was calculated. The consistency ratio was calculated as follows: Consistency Ratio (CR) = Consistency Index (CI) / Random Index (RI)

CR = 0.02/ 1.40 = 0.014

The RI value is 1.40, corresponding to n=8 in the Random Index table given in the data before. Since the obtained consistency ratio is less than 0.10, the decision-making process is consistent.

Finding priority values for alternatives

According to the determined criteria, alternatives were compared for each criterion. At this point, the IL, WV, CR, CI, and max values were calculated according to the pairwise comparison matrix. Since there are three alternatives, the calculation was based on the Random Index value of 0.52. Using these calculations, the consistency of the matrices was examined once more.

Since the consistency ratios obtained for price, staff qualification, instructors' qualification, cleaning, interactions, atmosphere, equipment modernity and variety are less than 0.10, it can be said that the decision-making process is within the acceptable range (Xu, 2000).

Calculation of final priority value

In this section, the final stage of the study, the priority values of the criteria and the alternatives are multiplied to determine the priority value of each alternative. The alternative with the highest value was determined as the best alternative supplier.

Table 5. Pairwise comparisons of alternatives in terms of all criteria

	λmax	CI	CR
Price	3.03	0.01	0.03
Staff qualification	3.00	0.00	0.00
Instructors' qualification	3.03	0.01	0.03
Cleaning	3.00	0	0
Interactions	3.01	0.00	0.01
Atmosphere criteria	3.06	0.03	0.06
Equipment modernity and variety	3.05	0.02	0.05
Location/access criteria	3.00	0	0

Note: CI = Consistency index; CR = Consistency ratio; CR≤0.10 is consistent.

Table 6. Calculating the priorities of alternatives

Criteria	Alternative			Weight of criteria
	Premium fitness centers	Mid-segment fitness centers	Low-cost fitness centers	
1- Price	0.08	0.26	0.65	**0.31*****
2- Staff qualification	0.53	0.29	0.16	0.03
3- Instructors qualification	0.63	0.26	0.10	**0.13***
4- Cleaning	0.40	0.40	0.20	0.05
5- Interactions	0.55	0.32	0.12	**0.20****
6- Atmosphere	0.64	0.28	0.07	0.08
7- Equipment modernity and variety	0.68	0.22	0.09	**0.13***
8- Accessibility	0.33	0.33	0.33	0.05
Priority values from alternative	**0.42**	**0.28**	**0.29**	

Considering the prioritization values in Table 6, premium fitness centers are the option with the highest value among fitness centers (0.42), followed by low-priced fitness centers (0.29) and then fitness centers in the middle price range (0.28).

Discussion and conclusions

In this study, which employs a multi-criteria decision-making approach, the following inferences can be made when these findings are evaluated. Examining the weights of the criteria reveals that price is the most important factor when selecting a fitness center. Fitness members see price as the most important factor when evaluating renewing membership of a fitness center. Fitness enthusiasts will be prepared to spend on their requirements. They might choose to join a gym that appeals to them after weighing up their selections for a fitness center. Consumers who are aware of the price range choose to go places where the service is comparable and the price is cheaper, according to some studies, which has the following implications: every customer tends to join a fitness facility at a fee that is within their budget; each gym-goer is aware of their fitness objectives, and therefore chooses a gym that can help achieve them; price may be the first factor that members think about as fitness centers tend to have standard equipment for various personal uses, such as treadmills and weights (Ong et al., 2021). There are studies in parallel with our research findings (Jang & Choi, 2018; Zarotis et al., 2017). For example, Jang and Choi (2018) identified the membership fee as the most significant factor affecting fitness center membership.

Another finding of this study that contributes to the literature is that interaction is also a crucial criterion for repeat membership. In other words, fitness members view the positive outcome of conversation and verbal information exchange between the service provider and the customer as an essential criterion for renewing membership of fitness centers. From this vantage point, it is reasonable to assume that communication plays a significant role in the decision to buy fitness services. Since it is at the forefront of all activities in the service sector, communication actually has a significant impact on people's preferences even though it is not very important in the production sector (Sevilmiş et al., 2022). A member's decision to use a particular fitness center is influenced by the effectiveness of the interpersonal interactions between consumers and service personnel during the service delivery process (Glaveli et al., 202). Here, fitness providers can focus on the quality of human connection - mostly between fitness instructors and participants – to influence the overall customer experience if they want fitness members to return to their fitness facilities. Examining the relevant literature, many studies have concluded that interaction is an essential component of high-contact services like fitness centers (Brady & Cronin, 2001; Glaveli et al., 2021).

An additional finding that contributes to the literature is that instructor competency is an important criterion for renewing membership. Without doubt, the development of instructors' competencies plays a significant role in sustaining a competitive advantage in service-producing businesses such as fitness centers (Change & Kim, 2003). It can be said that the perceived level of expertise displayed by the instructors is therefore effective in shaping the attitudes of members towards the center, given that the skill and knowledge displayed by the instructors ensures the safety and health of the customers (Wright et al., 1992). In this context, it can be claimed that staff competences influence members' behavioral intentions (repurchase) in respect to the service literature (Mediano & Ruiz-Alba, 2019).

A further finding of this study that contributes to the literature is that the modernity and variety of equipment is an important criterion in renewing membership of fitness centers. Unquestionably, today's fitness centers operate in the market as a sector in which innovative fitness equipment is used at the most advanced level (Sevilmis & Şirin, 2022). Therefore, having modern and diverse fitness equipment may differentiate fitness centers from each other and can play a significant role in members' renewal of membership (Macintosh & Doherty, 2014).

It may be claimed that fitness facilities have improved their offer in recent years with more cutting-edge equipment (Van Hilvoorde, 2008). According to the literature, the physical environment is crucial for generating excitement in leisure settings and for influencing customers' propensity to recommend and make repeat purchases (García-Fernández et al., 2020). In this context, we may claim that the variety or the newness of equipment may have an impact on repeat membership among members.

The final significant finding of this study is that, among the selection alternatives, premium fitness centers offer the greatest value. Fitness centers that implement different business models (low-price, middle-segment, premium) create a more advantageous position by applying different strategies (León-Quismondo et al., 2020). Compared to the findings of our study, the reason why premium fitness centers are seen as the most valuable alternative may be the perceived high status and prestige of the people who register with the service (Weise 2008) and the high quality standards they offer.

According to studies, users' perception of the physical environment in relation to sports activities affects their attitudes and behaviors in sports facilities (Funk, 2017). A positive perception of the physical environment increases the motivation and enthusiasm of users to engage in or refrain from engaging in sports activities (Tomlinson et

al., 1995; Karwowski, 2005). Therefore, the physical facilities and services of these fitness centers (Lukito, 2016) may be the reason why members prefer these centers.

From this, some inferences can be made. It may be said that consumers want products with the highest possible quality in addition to a reasonable price expectation from fitness members. It is conceivable to view a high-end fitness facility as the best solution in this context. At the same time, a key expectation of consumers is that businesses will satisfy the ideal level of both price and service requirements of fitness members. The appeal of the most affordable among these elite centers may directly affect people's buying preferences, even though centers with luxury service offerings are the most important alternative for renewing membership in this instance. However, they can maintain their price levels at a reasonable level in the premium fitness segment to show that they are the best alternative for re-subscription. Premium fitness centers may have to increase the price by bearing certain costs while meeting the highest service expectations of members. According to research, customers are eager to purchase from some businesses even though their costs are greater (Ferreira et al., 2010). This is based on elements such as the standing of the business's, the quality of the products it sells, and corporate social responsibility.

This article has contributed to understanding which criteria (price, staff qualification, instructor qualification, cleaning, interactions, atmosphere, equipment newness and location accessibility) are considered, and which alternative (low-priced, medium-segment, premium) is ideal for renewing membership of the fitness center by using the Analytical Hierarchy Process (AHP) method. The first finding is that price is the most significant criterion, relative to other criteria. The studies conducted highlighted the significance of cost (Ong et al., 2021; León-Quismondo et al., 2020). Other important criteria for re-membership of the fitness center were interaction, modernity of the equipment and instructor qualification.

A number of conclusions can be drawn from these results. Fitness centers should primarily pay attention to factors such as the newness of the equipment, regardless of their size, location and variety of activities offered. The relevant literature highlights the importance of equipment newness and diversity (Freitas & Lacerda, 2019; Sevilmiş et al., 2022). At the same time, this study has revealed that communication is an important criterion in renewing membership of a fitness center. Indeed, past research in the fitness industry has highlighted the importance of interaction for the success of fitness businesses (Glaveli et al., 2021; Sevilmiş et al., 2022; Ulseth, 2004). As such, fitness service providers are expected to rely significantly on the quality of human interaction – predominantly between the fitness instructors and the customer – in order to shape the overall customer experience. Finding the most suitable alternative fitness center to premium fitness centers is a key result of this study.

Sports management implications

This research also has administrative implications. Price has been determined to be the most important criterion for those who renew their memberships of a fitness center. In this context, fitness centers should prioritize maintaining reasonable pricing. Considering that only between 30% and 60% of members extend their membership for more than one year (MacIntosh & Law, 2015), emphasizing the importance of price in extending membership is imperative. Therefore, price is a significant factor in ensuring the long-term retention of members. The only way to combat intense competition in the fitness industry is through pricing (Ong et al. 2021). For this reason, fitness center managers must tailor their pricing policies to their customers and develop suitable payment methods. Fitness center managers may consider price concepts that include class passes and memberships, such as group workouts, cardio classes, or EMS membership. In addition, fitness center managers can provide members with flexible pricing membership packages. For instance, they may offer weekend or weekday memberships, 10-day memberships, and three-weekly entries. Here, the objective of all price-related measures is to provide the member's desired membership at the desired price against changing living conditions (Zarotis et al., 2017).

In addition, fitness center managers should prioritize factors related to the renewal of membership, such as customer-staff interaction, trainer quality, and newness of equipment. Every fitness client wants primarily to be valued, welcomed and understood (Agile & Loved, 2022). As a result, fitness center managers should prioritize strategies that facilitate open communication with members. A communicative environment should be created in which the member is valued from the moment they step into the fitness center until the moment they leave.

The certification of trainers is a crucial aspect of membership renewal in fitness centers. Without doubt, members believe that the only way for individuals to realize their athletic goals is through qualified trainers (Vieira & Ferreira, 2017). Managers of fitness centers can hire qualified trainers to assist members in achieving these goals. They can encourage their trainers to participate in seminars to increase their competencies and/or provide in-service training to enhance trainers' competencies. The last key factor in renewing membership of fitness centers is the newness of equipment. The fitness center should have sufficient quantities of modern equipment for the formation of equipment queues (Freitas & Lacerda, 2019). For this reason, fitness center managers should pay attention to the variety and sufficient amount of fitness equipment, as well as their perfect working order.

The final finding is that premium fitness centers are the most valuable centers. Opportunities exist, particularly for premium fitness center managers. Premium fitness center managers should emphasize their efforts to maintain high standards in particular. Focusing on high status and prestige advantages that will attract customers, managers of premium fitness centers should seek to increase membership through these means, since, according to the findings of this study, members perceive the premium option to be most valuable and may be willing to pay a little more for additional service options.

Limitations and recommendations

The criteria that fitness members consider when choosing a fitness center were identified through interviews in this study using the AHP technique, one of the multi-objective numerical decision -making techniques. In addition, the most suitable fitness center alternative for members was determined within the framework of expert opinion. Despite the fact that it has significance for stakeholders, owners and managers of fitness centers, this study has some limitations.

First, it should be remembered that the requirements for re-joining a fitness facility were determined by coding based on personal ideas. As a result, generalizability may be taken into consideration. The rankings may change with the inclusion of additional criteria or alternatives. Understanding the nature of repeat membership in fitness centers can be aided by conducting comparable independent studies in various fitness centers (such as women's fitness centers and boutique fitness centers). New research in this context and a sound interpretation of the study's findings by fitness managers will significantly help advance the existing body of knowledge.

Ethics approval and informed consent

These procedures were not necessary for this paper.

Competing interests

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