

A Quantitative Analysis of Indoor Fitness Facilities for the Elders Based on SWOT-AHP Model

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Abstract. The purpose is to explore and analyze the key factors affecting indoor fitness facilities for the elders and put forward corresponding suggestions. The SWOT method is used to make an overall analysis on the internal factors and external conditions of the existing indoor fitness facilities, but it lacks corresponding supportive data and the process of quantitative analysis. Therefore, the AHP method is used to make quantitative analysis on the results of SWOT qualitative overall analysis, determining the weight order of important factors affecting the market competition of indoor fitness facilities for the elders, and then, the targeted market competition strategies of indoor fitness facilities for the elders is formulated according to the weight order. The result is that the model combined with SWOT-AHP method can describe the market environment and competitive situation of indoor fitness facilities for the elders more comprehensively and accurately, and then provide more convincing grounds for formulating market competition strategies for indoor fitness facilities for the elders. The conclusion is that the overall qualitative and quantitative analysis of SWOT-AHP method can reduce the subjectivity of decision makers' evaluation and analysis, which can be used as a reference for the competitive situation analysis of indoor fitness facilities of the same kind for the elders and promote the better development of indoor fitness facilities for the elders.

Keywords: Indoor fitness facilities; The elders; Design strategy; Elderly-oriented; Analytic hierarchy process; SWOT analysis method;

1 Introduction

At present, there are relatively few researches on indoor fitness facilities for the elders. By investigating the fitness facilities for the elders and consulting relevant literature, it can be found that, at present, the existing researches on indoor fitness facilities for the elders remain immature, and basically, the indoor fitness facilities for the elders remain a gap in the market. The indoor fitness products for the elders are mainly household fitness equipment, with simplistic and limited types and sports methods. Wang Qiusha^[1] used AHP-SWOT method to study the development strategy of intelligent gym in China. Yang Aihui et al.^[2] used Kansei Engineering and Quantitative Theory Type I to construct the correlation model between the design elements of fitness products for the elders and the emotional needs of the elders; Tang Shujun et al.^[3] explored the product design of the elders with sarcopenia on the principles of safety, comfort and ease of use; An Yingli, Ma Guangtao et al.^[4] analyzed the psychology and physiology of the elders, and put forward design ideas for innovative public fitness facilities,

so as to satisfy the fitness needs of the elders. Zhu Weimo, Qin Xiong et al. [5] probed into the resistance training of the elders abroad. Fei Jiaming [6] conducted an enquiry about the fitness needs of the elders in the cities of Anhui province, and proposed targeted analysis from four levels: government, community, society and individuals, so as to meet the fitness needs of the elders living in urban communities of Anhui province. Hu Jianping et al. [7] probed into the physical fitness manners, demands and countermeasures of the elders. Proceeding from the psychological and emotional needs of the elders, Wei Lun [8] put forward a new idea of fitness products for the elders based on emotion. From the perspective of physical exercise training theory, Wu Xuewen analyzed the essential contents of exercise prescription, including the principles, contents, exercise load and precautions needing attention for the elders' fitness, and put forward several proposals on formulating procedures of exercise prescription for the elders. Domestic research scholars mainly confined their studies to the traditional commercial gyms, outdoor public facilities and household fitness equipment, while fewer and fewer studies has been made on indoor fitness facilities for the elders. In China, taking the Newbody Lohas Center as an example, the fitness centers for the elders implement semi-public welfare and market-oriented operation, with the third-party agency Shangti Health Technology (Shanghai) Company Limited providing them with physical fitness monitoring and sports rehabilitation training, and essentially different from the traditional gyms, the centers in essence are sports and health care centers, adopting the service mode of combining physical exercise care and health care. In contrast, foreign gym brands for the elders are booming rapidly. In the United States, for instance, Solver Sneakers, a mature fitness brand for the elders, has taken shape in considerable scale, with more than 1,600 fitness sites throughout the United States, and in Japan, such chain fitness brands for the elders as Curves and Joy Reha have sprung up in large numbers. Curves' main client group is elderly women over the age of 60, and has 4,500 clubs nationwide. Such mature abroad gyms for the elders can be used for reference. This paper will apply the model of AHP [9 ~ 11] and SWOT [12 ~ 13] to the qualitative and quantitative analysis on the indoor fitness facilities for the elders, and propose relevant suggestions.

2 SWOT analysis suitable for the implementation of indoor fitness facilities for the elders

2.1 Strengths: Basic advantages for the implementation of indoor fitness facilities for the elders

2.1.1 More scientific and safe fitness guidance

It is unsafe and unscientific for many elderly people to exercise in their free-wheeling ways in parks, while, compared with the high risk of outdoor exercise, conspicuously, it is of greater safety and scientific nature for the them to exercise in indoor gyms. The indoor gyms for the elders possess a suitable environment, professional equipment and the guidance of professional coaches, which can avoid accidents and injuries caused by improper exercise. Scientific fitness refers to, with the promotion of physical health as the essence of scientific fitness, under the guidance of professional coaches and doctors, developing the consciousness of promoting health by fitness, mastering theoretical knowledge and practical methods, and fully understanding its influence on physical health, so as to carry out fitness activities conforming

to the laws and disciplines of exercise and body. Not only needed by young people, personal fitness trainers are also needed more by the elderly people who are void of sports health knowledge and particularly vulnerable to physical injury.

2.1.2 Formulation of a safer and more reasonable exercise plan

The indoor gyms for the elders will evaluate the health status of the elders first, then draw up individualized fitness plans for them after evaluation, explain the correct fitness concepts and movements to them, and wear professional physical sign monitors on them for real-time monitoring changes in heart rate and others signs during exercise, so as to gradually and dynamically adjust the physical conditions and needs of the elderly in proper sequence, effectively help them to alleviate functional degradation, and promote them to form a correct fitness concept in order to reduce fitness risks. In addition, according to the actual physical conditions of the elders, they will gain exercises in terms of heart and lungs, muscles, balance and micro-circulation.

2.1.3 Fewer restrictive conditional factors

There are plenty of restrictive conditional factors in outdoor fitness, and when, for example, it encounters rainy day, windy days or when the air is bad, it is even more difficult for them to take exercises. Nowadays, square dancing, brisk walking and other events that are not limited by venues and facilities are the most primary contents and forms of fitness for the elders in China. In public city squares, community squares and other places, with the help of music accompaniment, the elderly people participate in fitness under the leadership of the team leader. However, due to the loose organization, such problems as noise disturbing people, encroachment on squares and obstruction to traffic, can be seen frequently in the newspapers, which makes irreconcilable contradictions between the fitness activities of middle-aged and elderly people and the social groups. Indoor fitness can avoid these situations and provide a space for the elderly to social contact.

2.1.4 Increased affections between the elders and their children

When entering the traditional gym for fitness, the elderly can also drive their children into the gyms, increasing the number of customer sources to the gyms. The sports data of the elderly can be bound to their children's mobile APP, so that they can monitor the sports changes of the elderly at all times and make their children feel more at ease. It will also promote the feelings and affections between the elderly and their children.

2.2 Weaknesses: The disadvantages of indoor fitness facilities for the elders

2.2.1 Lack of perfect operation and management system

The profit model of gyms [14 ~ 15] is single and limited, mainly selling annual cards and personal trainers. Gyms are high in their member churn rate but leave member loss alone, and even many gym managers regard member loss as revenue. It turns out that gym managers are generally poor at their management level, and many managers do not have a good command of the integral and overall development view, with weak industrial awareness. Therefore, in the eyes of the practitioners in the fitness industry, if the current gym wants to extend operations and make greater profits, it is the only way to exert all their strength on hardware, renting

larger venue, buying more expensive equipment and spending more money. The competition mode of price war, the pre-sale mechanism and the management system focusing on sales and ignoring service lead to the poor operation of the gym market, which restricts the development of professional fitness for the elderly to a great extent.

2.2.2 Lack of professional fitness talents targeted for the elders

At present, fitness instructors overwhelmingly serve young people, and pay more attention to physical appearance or muscle-building or fat reduction, while it remains a blind spot for many fitness coaches how to give professional guidance to the elderly. The scientific fitness of the elderly needs the guidance of talents who have a good command of both professional fitness knowledge and basic medical knowledge. Owing to the situation that most of the elderly have chronic diseases, higher requirements have been placed on professional fitness methods for patients with chronic diseases. According to the survey, the current indoor gym fitness instructors tend to be younger, low at their average educational background, weak in the professionalism, and inadequate in the innovation ability, so it is difficult for them to satisfy the needs of members in a targeted manner. Moreover, fitness coaches' salary is not high and mainly based on sales commission, with high performance pressure and unstable income, so it is hard for them to put focus on service. As a result, the phenomenon of job-hopping and career change of gym coaches is obvious, and a number of practitioners only consider coaching as a transitional occupation. Plus, the training certification of coaches is confused, and many coaches hold the same certification from different training institutions.

2.2.3 Lack of professional fitness facilities

Currently, the fitness equipment available for the elders in indoor gymnasiums is simple and limited in category and relatively monotonous in functions, which does not satisfy the exercise training needs of the elders. As silver-haired senior, compared with young people, the physical function of the elders is degraded, and the suitable fitness types and intensities are different. Generally, the fitness equipment in gymnasiums is heavy in weight and requires high arthrosis flexibility, which is not suitable for the physical characteristics of the elderly. And with the increase of age, the muscle strength of the elderly is weakened, the joint flexibility is poor, and the physical strength of the elderly is unbearable in all aspects. Therefore, the general gym equipment may not be suitable for them, and the exercise of the elderly requires the special equipment suitable for aging.

2.2.4 Serious homogenization and low sense of innovation

In China, the homogenization of traditional gyms is serious, and traditional gyms have closed down one after another. The market competition has become fierce. If the gym does not change its management concept, we will continue to see the homogenization of traditional gym management. Everyone knows that it is the competition differentiation that can avoid the Red Sea Market and make profits, but the author think the focus is thoughtless. Some investors are still blindly greedy for large venues, seeking the best equipment, looking for airborne surprise soldiers, but could not explain why it was so when asked about his investment in business positioning, marketing planning, management system and personnel training. However, it is hard for them to realize but a actual fact that the era of competition with money has been long outmoded on the present market.

2.2.5 Low market acceptance

Nowadays, indoor fitness institutions do not provide services for the elderly, which is considered troublesome and risky. Due to the consideration of manpower and risks, the ordinary gyms are afraid to do it. The threshold of indoor fitness for the elderly is high, and the general indoor gyms implicitly indicate that the elderly are not accepted. From the views of elderly people, some think that they are too old to enter the gym; There are still some elderly people who think that spending money for fitness exercise is unnecessary, though exercise is important. No matter how cheap the fitness is, they still think it is expensive, because they think that fitness doesn't cost money at all, and they can practice by themselves.

2.3 Opportunities: Future opportunities for the development of indoor fitness facilities for the elders

2.3.1 Policy support

In October 2020, the General Office of the State Council issued the document Opinions on Strengthening the Construction of National Fitness Site Facilities and Developing Mass Sports [16], and relevant departments encouraged, supported and guided various bodies to develop the sports fitness service industry for the elderly. According to the requirements of the Notice, during the construction of sites and facilities such as the National Fitness Center, full consideration should be taken into the needs of the elders, to provide fitness venues more suitable for the characteristics and needs of the elderly, to provide necessary assistance for the elderly to use venues, facilities and equipment, and to solve the difficulties and problems in intelligent exercise technology for the elderly. The government has continuously attached great importance to the issues of elderly care, and has successively issued relevant policies such as Opinions of the General Office of the State Council on Advancing the Development of Elderly Care Services and National Fitness Plan. These policies have greatly promoted the attention of relevant institutions and enterprises to the health of the elderly.

2.3.2 Market Opportunities

In the midst of the Red Sea Market War for traditional young customers, the traditional fitness industry is easy to reach the ceiling and produce development bottlenecks. If practitioners want to stand out from the crowd in the fierce competition, the elderly group is undoubtedly an incremental market. At present, however, there are not many products specifically designed for the needs of the elderly. Most of the elders' fitness in China are concentrated in square dance and park exercise equipment, and the "supply" is obviously insufficient. However, square dance is only a form of focus, which can't meet the rich and diverse fitness needs of elderly users. How to enrich the indoor fitness forms of the elderly and improve the fitness efficiency of the elderly is a brand-new blue ocean market that relevant practitioners need to think about. The elderly have money, leisure, perseverance and stronger demand. However, there is a serious shortage of professional gymnasiums for the elderly in the market at present, and sports and fitness for the elderly will be a good breakthrough. How to exploit the consumption upgrading demand behind the fitness for the elderly and do a good job in operation services will become the key for the fitness industry to compete for the elderly users. Under the general trend of national fitness, the professional fitness needs of the elderly need to be further explored and released, which has great commercial potential behind it.

2.3.3 Fitness and health needs of the elderly

With the facilitation of three factors, consumption upgrading, strengthened health awareness and official publicity, the fitness needs of the elderly are constantly awakening. However, with the development of the times, the active new elderly people with relatively stable economic conditions have gradually formed their new consumption concepts and life concepts. As a matter of fact, going to the gym for pumping iron, yoga and aerobics is becoming the choice of the new elderly people living in many first-tier cities. With more and more attention paid to health, people's health concept has been constantly updated, from taking medicine and surgery as their core to taking prevention as the core. An increasing number of elderly people accept the concepts of "better prevention than cure" and "exercise promoting health", and choose exercise and fitness as a means to promote health.

2.3.4 Economic aspects

With the continuous improvement of national economic development level and the growing maturity of social security system for the elderly, the income and consumption level of the elderly has continued to increase, and their consumption pattern has been optimized constantly. After research and investigation, the demand for health services and supplies industries for the elderly continues to increase.

2.4 Threats: predictive threats in the implementation of Indoor Fitness Facilities for the Elderly

The predictive threat of indoor fitness facilities for the elderly is mainly from the intensification of external competition. Encouraged by the relevant policies issued by the central and local governments, health-care towns with local characteristics, integrating eldercare services with medical care, are constantly springing up. The establishment of characteristic clubs for the elderly and geriatrics departments in general hospitals also offers the elderly more choices. The development of other related industries for the elderly has brought threats to the professional gym industry for the elderly. In essence, however, the health-care towns for the elderly is still a kind of fitness exercise focusing on rehabilitation.

2.5 Design strategy analysis matrix based on SWOT model

Table 1. Design strategy analysis matrix of indoor fitness facilities for the elderly

		Superiority (S)	Weakness (W)
		Internal capability	S1 Scientific and safe fitness guidance S2 Formulating safe and reasonable exercise plans
External factor	S3 Few restrictive factors such as weather S4 Increasing the affection between children and the elderly S5 Reducing social contradictions	W3 Serious homogenization and low consciousness of innovation W5 Low market acceptance W6 Low professionalism of fitness instructors W7 High threshold for the elderly	

Opportunity (O)	Countermeasure combining superiority and opportunity (SO)	Countermeasure combining weakness and opportunity (WO)
O1 Policy support and institutional foundation O2 Market opportunities O3 Fitness and health need of the Elderly O4 economic aspects O5 monotonous exercise form and exercise content of elderly people	SO1 Perfecting the policy and institutional foundation SO2 Customizing exclusive courses SO3 Offering scientific guidance to exercise SO4 Binding sports APP to children SO5 Catering to the needs of the elderly SO6 Combining exercise and medical care	WO1 Training related talents with strategy of cultivating independent and versatile management talents WO2 Support from relevant departments WO3 Formulating normative system WO4 Increasing publicity by government and society WO5 All-round service WO6 Blue ocean strategy
Threat (T)	Countermeasure combining superiority and threat (ST)	Countermeasure combining weakness and threat (WT)
T1 Intensification of external competition T2 Insufficient awareness of fitness concept	ST1 Developing the curriculum with the characteristics of the elderly group ST2 Improving core competitiveness. ST3 Encouraging the participation of various industries	WT1 Drawing lessons from foreign service models WT2 Lowering threshold WT3 Reducing membership fees of the elderly WT4 improving own level WT5 Promoting related innovations WT6 Researching on related psychology WT7 Talent training and qualification certification WT8 Cultivating the consciousness of fitness consumption

Through SWOT analysis, the design strategy of indoor fitness facilities for the elderly is determined. The SWOT analysis method only carries out the qualitative analysis on the market environment of the gyms, which is dominated by the decision-maker's subjective judgment, and thus, it cannot rank the importance order of each influence factor of research object through the quantitative method. Therefore, combined with characteristics of the AHP analysis, quantitative analysis is provided for the optimal design of indoor fitness facility for the elderly.

3 Design strategy to promote the development of indoor fitness facilities for the elderly

3.1 Constructing an AHP model for the evaluation of the optimal strategy of indoor fitness facilities for the elderly

Through SWOT, the various factors of the design strategy of indoor fitness facilities for the elderly are determined. The evaluation model of key factors of indoor fitness facilities for the elderly is mainly divided into three layers, and the following elements of the model are determined according to Table 1. Target hierarchy: (A) the key factors affecting optimal strategies of indoor fitness facilities for the elderly. Rule hierarchy: There are four hierarchies, including countermeasure combining superiority and opportunity (SO), countermeasure combining weakness and opportunity (WO), countermeasure combining superiority and threat (ST) and suggestions combining weakness and threat (WT). Project hierarchy: It is divided into 20 evaluation elements, as shown in Figure 1.

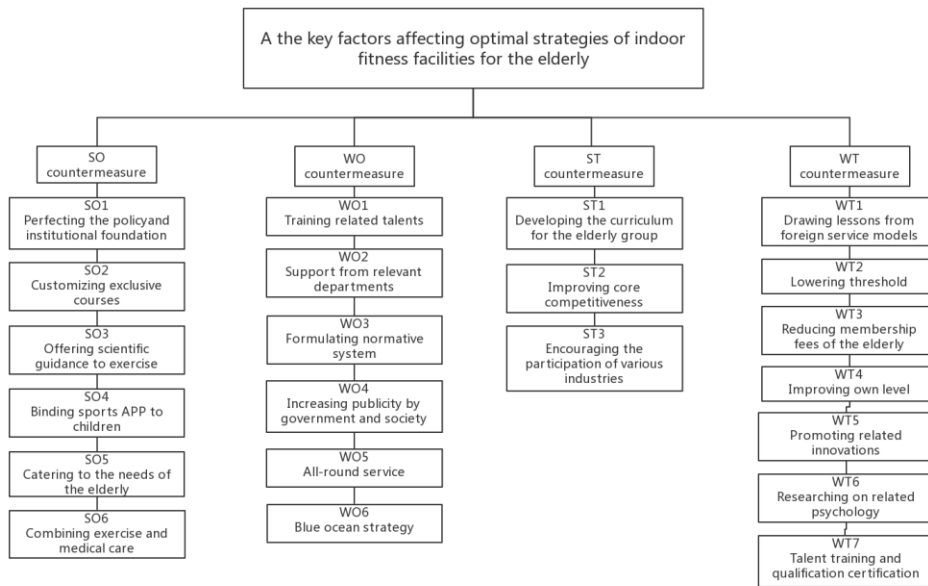


Fig. 1. AHP model for optimal strategy evaluation of indoor fitness facilities for the elderly

3.2 Using AHP method to determine the weight of evaluation factors

Relevant experts score n items of evaluation factors and construct a judgment matrix. Expert members include 7 gym managers, 5 master degree candidates specializing in product design

and 3 fitness instructors. Suppose, $A = [so_{i,j}]$, $so_{i,j}$ indicates the relative importance degree between the various items in the rule hierarchy that make up item A ,

$SO_{i,j} = 1, SO_{j,i} = 1 / SO_{i,j}$. Suppose, $SO_k = [SO_{m,n}^k]$, $SO_{m,n}^k$ indicates the relative importance degree of the corresponding items in the rule hierarchy that make up item SO_k , $SO_{m,n}^k = 1, SO_{n,m}^k = 1 / SO_{m,n}^k$.

Through analysis, it is known that the importance relationship among various items in the rule hierarchy can be expressed by matrix A. The correlations among the various items in the project hierarchy gives the form of matrices SO, WO, ST and WT:

$$A = \begin{bmatrix} 1 & 8/9 & 11/9 & 8/9 \\ 10/9 & 1 & 7/5 & 1 \\ 4/5 & 5/7 & 1 & 8/9 \\ 10/9 & 1 & 10/9 & 1 \end{bmatrix} \quad SO = \begin{bmatrix} 1 & 11/8 & 3/5 & 4/3 & 1 & 4/5 \\ 5/7 & 1 & 3/5 & 4/3 & 9/7 & 8/9 \\ 5/3 & 13/8 & 1 & 2 & 3/2 & 7/6 \\ 3/4 & 3/4 & 1/2 & 1 & 4/5 & 5/8 \\ 1 & 7/9 & 2/3 & 5/4 & 1 & 7/9 \\ 11/9 & 9/8 & 6/7 & 13/8 & 9/7 & 1 \end{bmatrix}$$

$$WO = \begin{bmatrix} 1 & 5/7 & 3/4 & 1 & 8/7 & 7/6 \\ 7/5 & 1 & 6/5 & 5/3 & 9/7 & 5/3 \\ 4/3 & 5/6 & 1 & 5/4 & 11/9 & 10/9 \\ 1 & 3/5 & 4/5 & 1 & 11/9 & 2/3 \\ 7/8 & 7/9 & 4/5 & 4/5 & 1 & 1 \\ 6/7 & 3/5 & 8/9 & 13/9 & 1 & 1 \end{bmatrix} \quad ST = \begin{bmatrix} 1 & 7/8 & 7/9 \\ 8/7 & 1 & 1 \\ 9/7 & 1 & 1 \end{bmatrix}$$

$$WT = \begin{bmatrix} 1 & 5/6 & 3/4 & 8/9 & 11/8 & 13/8 & 10/9 & 11/9 \\ 6/5 & 1 & 11/7 & 7/5 & 5/6 & 2 & 11/9 & 2 \\ 11/8 & 5/8 & 1 & 4/5 & 10/9 & 9/5 & 5/3 & 8/9 \\ 9/8 & 5/7 & 5/4 & 1 & 8/9 & 8/5 & 3/2 & 9/8 \\ 5/7 & 6/5 & 8/9 & 10/9 & 1 & 4/3 & 8/9 & 10/9 \\ 5/8 & 1/2 & 5/9 & 5/8 & 3/4 & 1 & 2/3 & 7/8 \\ 8/9 & 4/5 & 3/5 & 2/3 & 10/9 & 13/9 & 1 & 7/6 \\ 4/5 & 1/2 & 10/9 & 8/9 & 8/9 & 8/7 & 8/9 & 1 \end{bmatrix}$$

According to the data of the judgment matrix constructed by experts, the geometric mean method is used to calculate the maximum eigenvalue $\lambda_{\max}^A = 4.0068$ of the matrix A, which determines the relationship among the various evaluation factors in the rule hierarchy, and the maximum eigenvalues λ_{\max}^{SO-WT} of SO, WO, ST, WT, which indicate the relationship among the various evaluation elements in the project hierarchy, are 6.0244, 6.0417, 3.0011, 8.1348 respectively; And their corresponding weight vectors are calculated, that is,

$$\omega_1^A = \begin{bmatrix} 0.2542 \\ 0.2778 \\ 0.2141 \\ 0.2540 \end{bmatrix} \quad \omega_1^{SO} = \begin{bmatrix} 0.1612 \\ 0.1524 \\ 0.2382 \\ 0.1162 \\ 0.1435 \\ 0.1885 \end{bmatrix} \quad \omega_1^{WO} = \begin{bmatrix} 0.1552 \\ 0.2217 \\ 0.1829 \\ 0.1423 \\ 0.1429 \\ 0.1549 \end{bmatrix} \quad \omega_1^{ST} = \begin{bmatrix} 0.2932 \\ 0.3467 \\ 0.3601 \end{bmatrix} \quad \omega_1^{WT} = \begin{bmatrix} 0.1306 \\ 0.1655 \\ 0.1343 \\ 0.1375 \\ 0.1244 \\ 0.0841 \\ 0.1141 \\ 0.1095 \end{bmatrix}$$

3.3 Consistency check

Consistency check is carried out, and its results are shown in Table 2, that is,

Table 2. Results of consistency check

Category	A	SO	WO	ST	WT
CI	0.002 3	0.004 9	0.008 3	0.000 6	0.019 3
RI	0.890 0	1.260 0	1.260 0	0.520 0	1.410 0
CR	0.002 5	0.003 9	0.006 6	0.001 1	0.013 7

From Table 2, it is known that the consistency check results calculated by the judgment matrix scored by each expert are $CR < 0.1$, which indicates that the weight values obtained have passed the consistency check.

Table 3. Rank of comprehensive weight of various indicators

Indicator of project hierarchy	Comprehensive weight	Rank
Improving the participation of various industries	0.0771	1
Improving core competitiveness	0.0742	2
Developing the curriculum for the elderly	0.0628	3
Support from relevant departments	0.0616	4
Offering guidance to scientific movement	0.0606	5
Formulating a normative system	0.0508	6
Combination of physical exercise and medical care	0.0479	7
Cultivating relevant talents	0.0431	8
Blue Ocean Strategy	0.0430	9
Lowering the threshold	0.0420	10
Perfecting the policy and institutional foundation	0.0410	11
all-round service	0.0397	12
Increasing publicity by the government and society	0.0395	13
Customizing exclusive courses	0.0387	14

Catering to the demands of the elderly	0.0365	15
Improving own level	0.0349	16
Reducing the membership fees of the elderly	0.0341	17
Learning from foreign service models	0.0332	18
Promoting relevant innovations	0.0316	19
Binding sports APP to children	0.0295	20
Talent training and qualification certification	0.0290	21
Cultivating the awareness of fitness consumption	0.0278	22
Related psychological research	0.0214	23

According to Table 3, it can be found that the optimal strategy of indoor fitness facilities for the elderly is mainly the countermeasure combining superiority and threat (ST), followed by countermeasure combining weakness and opportunity (WO), countermeasure combining superiority and opportunity (SO) and countermeasure combining weakness and threat (WT). Therefore, it is suggested that the indoor fitness facilities for the elderly in China should take ST strategy as the main one, that is, giving full play to their own advantages, weakening external threats and giving consideration to other strategies simultaneously.

4 Suggestions and Countermeasure

4.1 Countermeasure combining superiority and threat (ST)

Relevant departments should encourage and call on other social organizations, such as culture, health, education and other organizations, to hold fitness exchange activities for the elderly, so that the elderly can get sufficient social support for fitness. In addition, the government should integrate the resources of education, culture, civil affairs and other departments, call on social capital to participate in it, stimulate social forces, and promote the better operation and development of the professional gym industry for the elderly. It is suggested to improve core competitiveness. It is also suggested to cooperate with professional sports colleges and universities, add related majors such as sports medicine for the elderly, or train professional talents by combining sports colleges with hospitals, so as to directly cultivate fitness instructors to the gyms. In addition, it is suggested to develop courses special for the elderly, with the focus on the physical characteristics of the elderly, set up courses on health-related physical fitness and anti-aging exercises, and understand the needs of elderly users by questionnaire survey, so as to offer some courses preferred by silver-haired people, such as Tai Chi, Five Mimic-animal Exercise and Ba Duan Jin Qigong. Besides, according to the different fitness and rehabilitation

needs of the elderly, different courses are formulated. Specifically, on the one hand, for the elders who have poor physical quality or prefer rehabilitation, according to their physical condition, the physical fitness test, basic health monitoring, exercise intervention for chronic diseases, and exercise rehabilitation training can be carried out, and exclusive courses can be customized according to their physical conditions from cardio-pulmonary function training, isokinetic muscle strength training, rhythm promotion micro-circulation training and balance training. A series of customized training courses launched are also included, involving rehabilitation nursing, rehabilitation physiotherapy and other services, so as to meet the fitness needs of the elderly to the greatest extent.

On the other hand, for the elderly with fitness needs, after their results of physical fitness test meets the requirements, the customized courses are not much different from those of young people, including swimming, yoga, aerobic exercise, anti-resistance training and gymnastics, the difference of which is that the training intensity of each course will be adjusted according to the physical conditions of the elderly. In addition to meeting the fitness and health needs of the elderly, entertainment areas and public exercise programs will be set up accordingly, such as knowledge lectures, cultural recreation and social activities, indoor square dance, yoga classes for the elderly, etc., which not only satisfies the psychological needs of the elderly who want to participate in the social contact, but also avoids disturbing the public outdoors. Lectures will hold regularly to pass on theoretical knowledge and time guidance. Functional areas will be divided and fitness equipment suitable for the elderly will be configured, including hydraulic fitness equipment which is safe, reliable and suitable for the elderly. The hydraulic pipeline design can produce training feeling like underwater exercise, so as to ensure the safe exercise state of the elderly, so as to improve exercise effect and reduce exercise risk.

4.2 Countermeasure combining superiority and opportunity (SO)

Through the support of policies and the perfection of institutional foundation, relevant departments should increase financial support on indoor fitness facilities for the elderly, fully implement the existing relevant policies and offer more preferential policies. The government should increase investment in the fitness industry for the elderly, and provide relevant social organizations with subsidies and loan subsidies to offer guarantee for the development of the fitness industry for the elderly. Scientific guidance should be given to the elderly when they exercise and keep fit, so as to avoid injuries caused by inadequate movements of the elderly during exercise. Relevant departments should encourage cooperation between hospitals and gymnasiums to promote the professional development of fitness industry for the elderly. Children can bind sports APP accounts to monitor the sports situation of the elderly in real time, so as to enhance the affections between the elderly and their children.

4.3 Countermeasure combining weakness and opportunity

Relevant departments should actively take measures to do a good job of publicity and supervision, guide the elderly to keep fit scientifically, and standardize the management of gymnasiums. The strategy of cultivating independent and versatile talents should be taken, in order to perfect the talent training scheme, and constantly discover and explore the potential of talents. There are still very few indoor fitness facilities for the elderly on the market. In the traditional Red Sea Market competition of young users, the fitness industry is easy to reach the ceiling and encounter their bottlenecks in the process of development, while it is no doubt that the

elderly group is an incremental market. The lessons can be learned from the service mode of foreign mature fitness brands and integrate physical care and health care services to open up new business opportunities. For example, the target users of Curves in Japan are middle-aged and old females. In order to improve the comfort of female users in the gym, there are no men from shop assistants to customer groups, and even it is clearly pointed out in the customer information registration interface of each Curves entities that male can't register. Relatively speaking, China possess a complete industrial chain, and cutting into the field of sports equipment suitable for the elderly can not only make the elderly exercise more free and healthy, but also open up a new market space.

4.4 Countermeasures combining weakness and threat (WT)

Indoor gymnasiums for the elderly should improve their own level and explore exercise methods integrated with intelligent devices. For example, the mode combined with smart TV provides AI teaching for the elderly. [17 ~ 18] Relevant government departments: it is clearly stated in "Healthy China 2030" Blueprint that it is necessary to give full play to the positive role of national scientific fitness in health promotion, prevention and rehabilitation of chronic diseases. The government and society should increase publicity and cultivate the consumption concept of fitness sports for the elderly, study their related psychology, and fundamentally let the elderly abandon their misunderstanding of fitness. The threshold for the elderly to join should be lowered, the membership fees of the elderly should be reduced. Gyms can be changed from the traditional annual card-oriented payment to the course-oriented payment, providing a variety of course choices and charging by the time, by which, elderly users can book courses in advance and then experience them. Talents with medical background should be encouraged to enter the fitness industry for the elderly, and fitness instructors with professional certification qualifications should be encouraged to learn basic medical knowledge, by which fitness instructors can provide health schemes for the elderly in the form of health consultants, including professional advice on sports health preservation and food supplement health preservation. For now, if the operation is maintained only by service fee income, the cost pressure of indoor fitness facilities for the elderly is still relatively high, which requires multi-party cooperation to relieve the pressure. For example, indoor fitness facilities for the elderly can cooperate with medical insurance and give corresponding preferential treatment to the elderly. Lessons can be drawn from foreign service models, such as the long-term care insurance proposed by Joy Reha, in which the elderly who receive services here only need to pay 20%-30% of the total cost, and most of the payments are long-term care insurance.

5 Conclusion

When the method combining SWOT analysis and AHP analysis is applied to the strategy formulation of indoor fitness facilities for the elderly: First, SWOT analysis method is used to determine the internal factors and external factors influencing indoor fitness facilities for the elderly. Then, AHP is used to rank the importance order of these factors. Finally, the optimal strategy of indoor fitness facilities for the elderly that should be formulated can be concluded. The method, combining the advantages of the two analysis methods, can provide more reference basis for the elderly indoor fitness facilities to develop strategies, and improve the reliability and accuracy of SWOT analysis. However, in reality, the problems faced by indoor fit-

ness facilities for the elderly are ever-changing, and it is impossible to solve all the problems with one model. With the continuous improvement of national policies and perfection of management system, indoor fitness facilities for the elderly will have brighter development prospects.

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