PERFORMANCE EVALUATION CRITERIA FOR PERSONAL TRAINERS: AN ANALYTICAL HIERARCHY PROCESS APPROACH

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Not only are personal trainers the face of the personal fitness industry, they also generate a significant portion of revenue in this multi-billion dollar business. It is therefore essential to produce the best possible personnel. In order to assist the industry in selecting the best trainers, we developed a preliminary personal trainer evaluation system based on a survey of experts. The analytic hierarchy process (AHP) method was then applied to the system. Of the three major dimensions – achievement, teaching, and service results – achievement results, which include course sales and team achievement, were identified as the most important.

Keywords: personal trainer, performance evaluation, analytic hierarchy process.

Modern fitness centers provide many different services, and in addition to the basic software and hardware services, free parking, personal rental lockers, childcare service, multifunction cards, and more may be offered. Increased public interest in health and fitness has led to greater demand for personal trainers and training programs to meet the specific goals of different individuals, such as weight loss, muscle gain, physical therapy, and so on. Personal trainer courses also bring in significant revenue for fitness centers that in the past have operated through income generated by membership fees and monthly cleaning expenses,
Personal trainers now provide members with the opportunity to use more than basic gym services. For example, the World Gym in Taiwan charges US$330 for six one-on-one courses, and US$782 for 16 courses (Tai & Chiu, 2007). In addition, personal trainers achieved market sales of US$260,000 per month at the Tungling Branch of California Fitness Centers in 2004. As this branch employed approximately 100 personal trainers, this put the value of each trainer at around US$2,600 per month. The CEO of World Gym in the United States commented that personal trainers brought in one third of the firm’s total gross profits, further highlighting the importance of instructors to fitness centers (Tai & Chiu, 2007).

This year, *Time* magazine listed fitness instructors as one of the 20 hottest occupations in the world, and it was noted that, at the time, there were approximately 400,000 personal trainers in the United States alone, with the number expected to rise. This trend is also apparent in Taiwan, where health clubs and fitness centers have begun aggressive promotion of the services of personal trainers (Wu, 2006).

One well-known institute called FACE TO FACE conducted a survey of fitness center members and found that 25% expressed an interest in using a personal trainer. Personal trainers are required to fulfill many different roles, including those of teacher, trainer, consultant, supervisor, supporter, nutritionist, dietician, and lifestyle management consultant (Chen, 2006). Sessions with personal trainers can be priced at US$50-60 per hour, and the quality of the service can significantly influence the reputation of fitness centers (Tai & Chiu, 2007).

Evaluations of their work can be used by personal trainers as references for pay raises and promotions. However, inappropriate evaluations of personal trainers may lead to a wide array of problems ranging from minor issues such as unqualified instructors, a mismatch between clients’ needs and personal trainer courses, and a lack of emphasis on the service content, to major problems such as instructors’ distrust and disappointment in the club’s productivity, and a loss of morale that leads to a decrease in service quality and quantity, and, thus, a lowering of the profit margin of the health club. Consequently, it is essential for health clubs and fitness centers to design an effective personal trainer performance evaluation system so that those clubs and centers can ensure that they are providing the best possible service. Therefore, the main goal in this research was to develop an effective performance evaluation system that can improve service quality as well as being fair to instructors, and that will increase the demand for personal trainers, and thus, revenue of fitness centers.

According to a review of existing literature, no reliable methods of personal trainer performance evaluation are currently in use in Taiwan. Most of the related academic studies discuss the profile, certification system, professional abilities, training efficacy, and general market position of a personal trainer (see e.g., Chuang, 2000; Jeng, 2003; Jiang, 2005; Ke & Yang, 2002; Lin & Shu,
Many of the researchers mentioned here analyzed the abilities of personal trainers and related market developments, and found evidence of the stability and growth potential of the profession. However, in this research we sought to take the first step in providing a study of an effective and comprehensive personal trainer performance evaluation system.

In relation to the standards that should be used to evaluate a personal trainer, Ke and Yang (2002) carried out a statistical, category, and factor analysis, and took steps toward collecting together a body of reliable information. Results of their study show that a fitness instructor’s professional knowledge is composed of six major factors, namely: administrative management, related knowledge, guidance execution, work attitude, paperwork handling, and human relations. Liu (1991) noted that professional fitness instructors should have the following five skills: general knowledge, professional skills, specialized knowledge, and experience, specialized techniques and abilities, and thorough knowledge of and special professional language skills, familiarity with technical regulations, and understanding of a professional environment; professional sportsmanship, defined as dedicated service attitude, stable emotions, commitment to an employment contract, and so on. Similarly, Chen (1989) stated that a successful instructor must have the following basic skills: general knowledge, principles and techniques of sports diagnosis, evaluation methods and techniques in body adjustability, CPR and crisis management, leadership and command abilities, the ability to arrange an appropriate sporting environment, sports technique teaching ability, suitable personality traits, concept of corporate management, deep understanding of special personnel, and so on.

Penman and Adams (1980) listed a fitness instructor’s necessary professional abilities as follows: financial management with regard to budgets, assets, equipment, schedule adjustments, and employees; public relations with regard to communication with news media, personal communication skills, and being able to maintain good human relations; professionalism, with regard to having appropriate skills and knowledge, education, service situation, and evaluation; personality, with regard to relevant personality traits and maintaining good relationships with colleagues; organizational administrative abilities, such as being able to maintain relationships with colleagues and superiors, activity management, the purchase and maintenance of sports equipment, regulation level, evaluation ability, recruitment ability, and procedure policy. Stiff (1993) listed the important attributes of a trainer as follows: maintaining a high level of professionalism; having appropriate work wear; setting personal goals; motivating clients to work out; having good communication skills; paying attention to the amount that clients exercise; having consideration for others; knowing CPR and basic first aid skills; having computer skills; being competent with regard to managing human relations; having knowledge of marketing skills;
caring for clients; keeping records in a training log; understanding the differences between individual clients; having the ability to solve conflicts.

The California Fitness Center in Taiwan evaluates its personal trainers based on the following dimensions: communication skill; representation skill (service results); achievement results; the ability to communicate professional knowledge in the instructor’s own way, tailoring communication of knowledge to different levels for the general public, allowing the clients to clearly understand the knowledge regarding body adjustability (teaching results) (California Fitness Center, 2007). Similarly, World Gym’s evaluations of its personal trainers include the following: professional skills (teaching results), content of service (service results), and personal and team achievements (achievement results) (World Gym, 2008), with the achievement results being the guaranteed sales of the team for each month, which correspond to an individual’s salary level, or the sales of personal courses, which affects the amount of commission for each class.

METHOD

CONSTRUCTION OF THE RESEARCH MODEL

There are two steps in building the performance evaluation system, the literature review and the analytic hierarchy process (AHP), as follows:

**Literature review** The preliminary structure and standards of the personal trainers’ performance evaluation which were developed were based on the literature review. The evaluation included a total of three dimensions and 15 detailed items. The three dimensions are: teaching, achievement, and service. The teaching dimension includes quality of the course, client instruction and interaction, course innovation, course design and arrangement, and client workout result. The achievement dimension includes course schedule arrangement, course sales, recruitment of clients, marketing communication skills, and team achievements. The service dimension includes administrative management, improvement of the center’s image, interaction with others, participation in related activities, and providing related information. The structure of the three dimensions and 15 detailed evaluation items is given in Figure 1.

**Analytic Hierarchy Process (AHP)** This procedure was created in 1971 by Thomas L. Saaty, and is widely used for assessing uncertain situations with numerous evaluation criteria. The method allows individuals to choose a value between 1 and 9 to rate the strength of the relationship between items in order to establish the pairwise comparison matrix to calculate the related eigenvalues and the eigenvectors. The largest eigenvector will be inspected using the evaluation criteria through orders of large to small values, and then the researcher can select the appropriate evaluation criteria. In recent years, the AHP method has been widely used in different domains to deal with problems related to planning,
generating a set of alternatives, setting priorities in decision making, and the allocation of resources. Thus, in this research we first applied AHP to the opinions of the interviewees with regard to the three dimensions of teaching, achievement, and service. We then used the AHP to consider the importance of the individual components of each dimension.

**Figure 1.** Personal trainers’ performance evaluation structure.

**Participants**

We applied AHP theory and methods and conducted interviews with 10 experts, including five personal trainer managers, two Federation of International Sports Aerobics and Fitness (FISAF) personal instructor examiners, and three college professors.

**Analysis Method**

We applied AHP theory and methods to the survey data to establish the weights of the various dimensions and their components for the performance evaluation of personal trainers. The details of the procedure are presented below.

*Establish a pairwise comparison matrix* Using the survey data to establish a pairwise comparison matrix $A = \begin{bmatrix} a_{ij} \end{bmatrix}_{m \times m}$, the importance of the comparative values is represented by $a_{ij}$; while $a_{ij} = 1$, $a_{ji} = 1/a_{ij}$, $i = 1,2,...,m$, $j = 1,2,...,m$ is the multiple comparative value of the decision maker versus the decision factor of $i$ and $j$. 
The fraction number used during the comparison is represented by 1, 3, 5, 7, 9; 1 for equal, 3 for moderate, 5 for strong, 7 for very, and 9 for extreme. If there is a need for compromise values then 2, 4, 6, 8 can be used as constant values.

**Calculating the eigenvalues** To examine if the pairwise comparison matrix \( A \) met the requirement for consistency, it was necessary to calculate the maximum eigenvalue \( (\lambda_{\text{max}}) \) and eigenvector \( W_i \), and when the maximum eigenvalue \( (\lambda_{\text{max}}) \) should be matched to the eigenvector, then they become the relative weight values in the evaluation criteria.

\[
W_i = \left[ \prod a_{ij} \right]^{1/m} / \sum_{i=1}^{m} \left[ \prod a_{ij} \right]^{1/m} \quad \text{........................................... (2)}
\]

After establishing the pairwise comparison matrix, it is possible to obtain the priority vector of the factors for each level. If \( \lambda \) turns into the eigenvalue of \( A \), then \( W \) will be \( A \)'s eigenvector.

\[
(A - \lambda I) \cdot W = 0 \quad \text{........................................... (3)}
\]

The approximate computation of the maximum eigenvalue \( (\lambda_{\text{max}}) \), is to multiply pairwise comparison matrix \( A \) with priority vector \( W \), obtaining vector \( W \), and then take every factor in \( W \) to prioritize the factors in the \( W \) vector.

\[
A \cdot W = W' \quad \text{........................................... (4)}
\]

The number obtained at the end of the equation is then used to calculate the average value, which then becomes the maximum eigenvalue \( (\lambda_{\text{max}}) \).

\[
\lambda_{\text{max}} = \left( \frac{1}{m} \right) \times \left( \frac{W'_1}{W_1} + \ldots + \frac{W'_m}{W_m} \right) \quad \text{........................................... (5)}
\]

**Examining the consistency** When AHP needs to be compared, it is necessary to achieve consistency, and thus it must be ascertained whether pairwise comparison matrix \( A \) is consistent. The method of examination involves using a consistency index (CI) and consistency ratio (CR), and the equation used is as follows:

\[
\text{CI} = (\lambda_{\text{max}} - m) / (m - 1) \quad \text{........................................... (6)}
\]
CR = CI / RI  

In this equation, \( m \) represents the index number of that certain hierarchy, and \( RI \) is a random index which is obtained by the different CI values produced by the index number in different hierarchies. Saaty (1977) referred to research from Oak Ridge National Laboratory and University of Pennsylvania, Wharton School and produced with a set of RI values, as shown in Table 1.

<table>
<thead>
<tr>
<th>( m )</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td>RI</td>
<td>0.00</td>
<td>0.00</td>
<td>0.58</td>
<td>0.90</td>
<td>1.12</td>
<td>1.24</td>
<td>1.32</td>
<td>1.41</td>
<td>1.45</td>
<td>1.49</td>
<td>1.51</td>
<td>1.48</td>
<td>1.56</td>
<td>1.57</td>
<td>1.59</td>
</tr>
</tbody>
</table>

Saaty (1980) suggested that CI = 0, represents the survey takers’ consistency before and after the assessment of the decision factor, signifying that there are no discrepancies between the two, while CI = 0.1 is the permissible error tolerance. When CR = 0.1, the consistency of the matrix is satisfactory, and thus it can be said that the whole evaluation process reaches its consistency.

**Calculating the weight of the whole hierarchy**  
Lastly, the eigenvector of the maximum eigenvalue must be calculated and transformed into the weight of each hierarchy index, the sum of which should be 1. A description of how this is carried out can be found in the Data Collection and Analysis section.

**Data Collection and Analysis**  
In order to analyze the performance evaluation criteria and its structure, the researchers used Microsoft Excel to execute the AHP procedure to obtain the average weight of each group. Each group thus represented the expected index weight of the personal trainers’ performance evaluation.

**Analysis of the three dimensions of personal trainers’ performance evaluation**  
The analysis showed that the achievement dimension is the most important, and the weight value was arranged from high to low in the order of 0.637 for achievement, 0.258 for teaching, and 0.105 for service. In addition, the CI and CR were both valued below 0.1 at 0.019 and 0.033, signifying consistency in the pairwise comparison matrix index and ratio, as confirmed by the survey responses of professional decision makers. The details of the order and weight of the three evaluation dimensions are given in Table 2.
Performance evaluation criteria of Personal trainers

Table 2

<table>
<thead>
<tr>
<th>Weight of system</th>
<th>Weight value</th>
<th>Order</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching</td>
<td>0.258</td>
<td>(2)</td>
</tr>
<tr>
<td>Achievement</td>
<td>0.637</td>
<td>(1)</td>
</tr>
<tr>
<td>Service</td>
<td>0.105</td>
<td>(3)</td>
</tr>
<tr>
<td>CI</td>
<td>0.019</td>
<td></td>
</tr>
<tr>
<td>CR</td>
<td>0.033</td>
<td></td>
</tr>
</tbody>
</table>

Weight analysis of the personal trainer evaluation criteria

- **Teaching** Following the AHP procedure, the weight of the criteria of the three dimensions of personal trainer evaluation was calculated, and examined with CI and CR. Table 3 shows the order of priority of the teaching criteria as: client workout result (0.261), client instruction and interaction (0.260), course design and arrangement (0.256), course innovation (0.145), quality of the course (0.078); CI and CR valued at 0.011 and 0.010 both $\leq 0.1$.

Table 3

<table>
<thead>
<tr>
<th>Criteria of teaching process</th>
<th>Weight</th>
<th>Order</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of the course</td>
<td>0.078</td>
<td>(5)</td>
</tr>
<tr>
<td>Client instruction and interaction</td>
<td>0.260</td>
<td>(2)</td>
</tr>
<tr>
<td>Course innovation</td>
<td>0.145</td>
<td>(4)</td>
</tr>
<tr>
<td>Course design and arrangement</td>
<td>0.256</td>
<td>(3)</td>
</tr>
<tr>
<td>Client workout result</td>
<td>0.261</td>
<td>(1)</td>
</tr>
<tr>
<td>CI</td>
<td>0.011</td>
<td></td>
</tr>
<tr>
<td>CR</td>
<td>0.010</td>
<td></td>
</tr>
</tbody>
</table>

- **Achievement** Table 4 shows the order of priority of the achievement criteria was as follows: course sales (0.919), team achievement (0.914), course schedule arrangement (0.688), marketing and communication skills (0.687), recruitment of clients (0.655); CI and CR were valued at 0.079 and 0.070, respectively, both $\leq 0.1$. 

Table 4
Performance evaluation criteria of Personal trainers

Table 4
Order and Weight Value of the Achievement Criteria

<table>
<thead>
<tr>
<th>Achievement criteria</th>
<th>Weight</th>
<th>Order</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course schedule arrangement</td>
<td>0.688</td>
<td>(3)</td>
</tr>
<tr>
<td>Course sales</td>
<td>0.919</td>
<td>(1)</td>
</tr>
<tr>
<td>Recruitment of clients</td>
<td>0.655</td>
<td>(5)</td>
</tr>
<tr>
<td>Marketing and communication</td>
<td>0.687</td>
<td>(4)</td>
</tr>
<tr>
<td>Team achievement</td>
<td>0.914</td>
<td>(2)</td>
</tr>
<tr>
<td>CI</td>
<td>0.079</td>
<td></td>
</tr>
<tr>
<td>CR</td>
<td>0.070</td>
<td></td>
</tr>
</tbody>
</table>

Table 5 shows the priority of the service criteria was as follows: administrative management (0.254), providing related information (0.203), people interaction (0.194), participation in related activities (0.187), improvement of the center’s image (0.162); CI and CR were valued at 0.085 and 0.076, respectively, both $\leq 0.1$.

Table 5
Order and Weight Value of the Service Criteria

<table>
<thead>
<tr>
<th>Service criteria</th>
<th>Weight</th>
<th>Order</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrative management</td>
<td>0.254</td>
<td>(1)</td>
</tr>
<tr>
<td>Improvement of the center’s image</td>
<td>0.162</td>
<td>(5)</td>
</tr>
<tr>
<td>People interaction</td>
<td>0.194</td>
<td>(3)</td>
</tr>
<tr>
<td>Participation in related activities</td>
<td>0.187</td>
<td>(4)</td>
</tr>
<tr>
<td>Providing related information</td>
<td>0.203</td>
<td>(2)</td>
</tr>
<tr>
<td>CI</td>
<td>0.085</td>
<td></td>
</tr>
<tr>
<td>CR</td>
<td>0.076</td>
<td></td>
</tr>
</tbody>
</table>

Discussion

The results of this research show the order of priority for the main structure of the personal trainer performance evaluation was as follows: achievement (0.637) > teaching (0.258) > service (0.105). The data clearly show that achievement is far more important than teaching and service with regard to personal trainer evaluation. Chen (2006) stated that trainers have adapted to the changes in the market and the sports environment. The duties of the trainers in fitness centers have greatly changed since the 1990s, and the multifunctional instructors of today not only reduce human resource expenses, but also can bring greater profits to the club. The achievement dimension of the personal trainer evaluation has become the most important evaluation system index.
The criteria for the teaching process show that client workout, course design and arrangement, and course innovation all have significant weight values, followed by quality of the course and course innovation. Consequently, the relationship between the first three items comes from the workout result of the personal trainer and the client; and the trust between the personal trainer and the client during the workout. The end result corresponded to the main motive for the member to join in the program. This is the inclusion of the workout regime in the client’s lifestyle for the benefits of doing exercise with the help of professional trainers to achieve his/her goals. The professionalism of the personal trainer will thus present itself in the evaluation of teaching.

The achievement criteria show that course sales weigh much more than the other four items, and the respondents reported that the main duty of a personal trainer is to design personal short-, mid- or long-term workout plans. However, before executing the plan, the client must be persuaded to purchase the course for the plan to be realized. Therefore, the results of this research clearly show that trainers must have other professional skills, such as marketing, in order to fully realize their potential and bring adequate profit to the fitness center itself.

The service criteria show that the most important item was administrative management. Tsai (2005) stated that an exceptional personal trainer can advance to the management level, and such individuals require additional skills. Other than providing services to the customer, service criteria also included a set of self-management standards for the trainers to improve themselves. This is an important criterion in evaluations if trainers are to advance to the management level.

The application and research methods used in this study could be used as a reference in future works. Despite the importance of the achievement dimension, it should be emphasized that fitness centers cannot ignore service quality and should continue to adapt to meet clients’ needs.

In this study we have taken the first step in constructing a performance evaluation system for personal trainers. Future researchers could take this a step further by applying our methods, even the fuzzy AHP method, to the various types of fitness centers for the purpose of studying differences in the appraisal of personal trainers.

REFERENCES


