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# Intelligent Sports Teaching Tracking System Based on Multimedia Data Analysis and Artificial Intelligence

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**Abstract:** In recent years, the sports environment has realized the significance of physical and psychological features. The sports staffs, athletes, and coaches have shown that new theories and treatments are used to enhance psychology. The basic needs in the individuals' social life are urban public sports. Based on the equalized public services, this paper provides the urban facilities of equalizing public sports. National and consistent rules can provide urban public sports products and services, which are basic to citizens, considering their livelihoods and entertainment needs. In this paper, Semantic Multilevel Structural Equation Modeling (SMSEM) has proposed to assess the sport psychological demand for urban public sports services by artificial intelligence and multimedia data analysis. The goal is to concentrate closely on the demand for sports by the masses, which improves the quality and efficiency of the government's urban public sports service supply. It also promotes the construction of urban sports and leisure cities, allows more people to enjoy urban public sports and guarantees basic sports rights. The growth of positive psychology has a wide range of theories and application fields and enriches new sports psychology theory and application. The relationship between psychological monitoring and sports exercise is closest to the field of competitive sports. The systematic and specialized direction is moving in psychological guidance. In the future application, the results obtained from sports psychology are more applicable.

**Keywords:** artificial intelligence; multimedia data analysis; semantic; sports psychological; urban public sports

## 1 INTRODUCTION

The athletes' performance has been evaluated by psychological, physical and social factors [1]. Coaches believe that athletes' performance can be enhanced through the improved psychological competencies [2]. Psychological involvements have shown a positive effect on the athletes' performance in many sports including swimming, football, softball, skating, golf, and tennis [3]. Different athletes compared in high-level performance studies reported the desirable psychological features of successful athletes, which are: self-regulation of anxiety, high concentration, high self-confidence, anxiety control, positive sports concern and determination, and engagement [4]. The studies have demonstrated that athletes have acute psychological abilities to succeed [5]. The resemblance of psychological factors, a multidimensional structure and the improvement of sportsman's performance are closely linked to psychological skills and mental toughness [6] as "the natural or established psychological edge" as follows. In general, the several demands of the sport place on the actor better than your opponents. To be more consistent, consistent, and power-controlled than your opponents [7]. These athletes adopted psychological skills to maintain this mental toughness in addition to developing their mental toughness [8]. Athletes can learn how particular skills improve mental stability development and maintenance [9].

Sports psychologists have initiated the psychometric properties of the psychological competencies involved in sport, which have identified and measured athletes' mental status to facilitate further consultancy [10]. Furthermore, the questionnaires measure factors for specific areas such as anxiety and PSIS (Psychological Skills Inventory in sports) team factors, ACSI-28 (Athletic Coping Skills Scale-28), APSI (Athletic Psychological Skills Inventory) coping skills, and performance improvement in the testing of performance strategies [11]. Psychological support for athletes mostly includes the following aspects, which are control, emotional stability, concentration, focus, and psychological stability, role placement, regrowth of psychological fatigues, independence, adjustment of the wake-up level, preparation for the training and competition, negative emotions adjustment [12].

The public service's objective is to maximize public interests. Sports services play a major role in the development of individuals [13]**.** Physical exercise affects the health of individuals. Urban sports facilities are the important part of basic public services, the result of the sport socialization, and the important construction of urban spiritual civilization [14]. The capacity for urban public sports must be strengthened, the effectiveness of urban public sports must be improved, the power of sports must be coordinated with the economic and social development [15]. Sports largely belong to public services and public utilities [16]. It is a major responsibility of governments at all levels to allow urban public sports services to citizens. On this basis, the strategy improved the urban public sports services efficiency [17], which enhances the level of public sports in urban areas, the national fitness strategy, and develops sports promotion [18].

The factors affect that the urban sport service efficiency is the formation and development of a relatively comprehensive public sports system in urban areas, which has become an important part of building an all-round well-being society [19]. Public urban sports services refer to the government sector as a core. The City's Public Sports resources are assigned in line with the scope of the powers and duties, prescribed by law to ensure the implementation of sports laws by individuals or organizations and meet the needs of urban public sports. Additional ways shared sports services, which are provided to the public. The government as a purchaser must agree to the assessment of efficiency; the non-organization as a service supplier should accept the assessment of service quality [20]. The idea of the urban public sports system is composed of elements to meet the needs of urban public sports, which has developed by the public service system. The equality for public sports and

urban sports services depends on the urban public sports service supply reform [21]. From protecting and improving livelihoods, the urban public sports service model is closely linked with national health and a major session of the basic public service system [22]. The department of sports management is composed of the sports system administrator proportion in the sports management department. The relationship between government and urban public-sports services is tested in the sport management department. Further, multimedia data analysis improves sports teaching and tracking systems significantly by providing in-depth insights into performance, assisting in skill development, and facilitating injury prevention. Coaches use visual data to provide targeted feedback, develop personalized training programs and strategies based on tactical analysis. Athletes can be monitored in real time through multimedia data, allowing for immediate adjustments during training and games. Furthermore, multimedia content increases fan engagement, while the integration of various performance metrics allows coaches and sports scientists to make data-driven decisions. Therefore, multimedia data analysis is crucial in improving athlete performance, coaching methodologies, and the overall sports experience.

In this paper, the Semantic Multilevel Structural Equation Modeling (SMSEM) is used for analyzing the sports psychological demand in urban public sports services by artificial intelligence and multimedia data analysis. Combining psychological indicators, physiological indicators, and behavioral indicators, qualitative evaluations of laboratory observations and sports fields have been analyzed by self-assessment and self-esteem. A structural model is constructed to evaluate the impact of training in sport psychology. This is a major challenge for sports psychology and a crucial guarantee to psychological training, psychological monitoring, and psychical counseling for the efficiency of sports athletes.

The main contribution of the paper is as follows.

- To propose the Semantic Multilevel Structural Equation Modeling (SMSEM) for analyzing the sports psychological demand in urban public sports service using artificial intelligence and multimedia data analysis.
- The questionnaire survey has been performed for an effective solution in terms of sports psychology and demands.
- The experimental results have been performed and the proposed method has high performance when compared to other existing methods.

The remainder of the paper discusses as follows: Section 1 and section 2 discuss the introduction and existing methods of sports psychological demand. In section 3 the Semantic Multilevel Structural Equation Modeling (SMSEM) has been proposed for analyzing the sports psychological demand in urban public sports services using artificial intelligence. In section 4 the experimental results have been performed. Finally, section 5 concludes the research article.

## 2 LITERATURE REVIEW

Jennifer E. Bruening et al. [23] proposed the sport-based service-learning program (S-SLP) to determine the effects of intentional design and structure of sports. Data collection methods in the current study include surveys and interviews. The use of mixed methods enables searchers to address complex issues influenced by race, social class, education, and other social identities. The depth of data mixed methods could not have been achieved with quantitative or qualitative methods. Furthermore, the service-learning environment and the specific design, structure, and management elements related to that environment broadened a survey of how to manage sports for a change. Initial efforts were made to look at how these factors led to the development of social capital. Much additional work with other programs and in other contexts is necessary.

Liu Liu et al. [24] initialized the Behavior Events Interview (BEI) for professional sports coaches. Besides, the study consisted of the "Competence Model of Sports Coaches in the Province of Sichuan", which involves knowledge acquisition, creative awareness, co-operation and trust in colleagues and the promotion of collaboration, confidence, authority, and attention to detail. Lastly, the study provided the model with an explanation. No significant difference in length of interviews (evaluated by several characters) was identified between the excellent and the common group. Interviews and the frequency of skills occurring did not correlate significantly with one another. Similarly, they did not correlate meaningfully with each other. The interviews and the average scores. The average values and frequency can both be coded for data analysis, and relatively good stability and differences are demonstrated. The frequency ensued competency characteristics and differed suggestively between the excellent group and the common cluster.

Lenamar Fiorese et al. [25] suggested the Text mining techniques, latent semantic analysis and K-means Clustering (TMT-LSA-KMC) for Sports and Exercise psychology. The research focuses on the impacts of life quality, physical activity, and GPs have examined sports as a means of promoting social support and studying psychological aspects of sports as well as the effects of health and education. The conclusion was that SEPs were the main contributors to exercise and sports science. The research focused on the interface between activity and health, quality of life, and education, with gaps in sports and performance programs progressing. By potential sport as a tool to promote health, social and education assistance, psychology graduate programs have shown significant contributions to the SEP.

Kai Lin et al. [26] proposed the Athletic Skills Inventory (APSI) to assess psychological skills. The study used the APSI model to reflect the structure of the psychological factor. As a valid and reliable measurement form, the model was supported. The factor structure of APSI in the Taiwanese collegiate athletes has been verified by second-order confirmatory factor analysis (CFA). Pressure peaking and adversity coping were collected into a basic factor, and adversity coping. The psychological latent structures required a calculation of the whole model to clarify the elements, which explain athletes' psychological skills. Previous studies have shown that while psychological skills are not identical, they have similar themes. Due to multi-group analyses of age group, gender, or extra criteria, the athlete's performance level

(division) was chosen in this study as a criterion to test model equivalence.

Boris Milavic et al. [27] introduced the Psychology skills inventory of sports youth version by the short form (PSIS-Y-SF) for assessing the psychometric properties. The PSIS-Y-SF was derived from a total of ten experts in agonistic sports psychology and five of them. The psychometric analyses include confirmatory factor analysis (CFA), the internal consistency analysis and the correlation among sub-scales (Raykov's maximum reliability), etc. Multivariate Variance Analysis (MANOVA) was conducted to test statistical differences among player categories in all subscales. The results of the CFA showed that the six primary factor solutions for the PSIS-Y-SF were adequate. Maximum consistency statistics suggests that all subscales are well-consistent internally and that the MANOVA recommended variances between player types. The PSIS-Y-SF was a reliable and valid tool for the evaluation of the psychological abilities of sports. Results from the PSIS-Y-SF psychometric assessment.

Feng Cao et al. [28] introduce the physical education tracking system (IPETS) and investigate the methods for formative athletic knowledge assessment in computer evaluation, because the educational system is always changing by technological, social, and cultural advances. The use of Information and Communication Technology (ICT) is critical for improving physical and athletic training approaches. The study also investigates the application of Artificial Intelligence (AI) technology in enhancing educational activities and recognizing university students' regular exercises.

To overcome these issues, in this paper, the Semantic Multilevel Structural Equation Modeling (SMSEM) for analyzing the sports psychological demand in urban public sports services by artificial intelligence and multimedia data. Positive psychology is a system concerning the negative psychology of psychological research. The main cause is so-called negative psychology, which is human psychological problems, treatment, and diagnosis of mental illness. This work focuses on the aspects of human virtue and power, which needs psychologists to look appreciably at human potential, motivation, and ability.

## 3 SEMANTIC MULTILEVEL STRUCTURAL EQUATION MODELING (SMSEM)

This paper applies the Semantic Multilevel Structural Equation Modeling (SMSEM) for analyzing the sports psychological demand in urban public sports services using artificial intelligence and multimedia data analysis. Normally the human body accepts orders from the brain that enable people to move every day. The individuals can control their actions by controlling the mind. The goals of sports psychologists are to assist athletes, which improves the performance with their psychological skills and mind control. Besides, the function of sports psychologists should be to assist athletes in controlling emotions. The personality consists of numerous psychological abilities that affect the performance of the athlete. The self-confidence and rumination are two main components. The task of a sports psychologist is to boost and help athletes to think through themselves. Furthermore, for athletes confliction individually. As a team, the impact of sports psychologists is essential. Team players should believe each other in team sports to create virtues and enhance flaws.

Aggression is a major predictor of somatic anxiety. The analysts of cognitive anxiety have neurotics, openness, and aggressivity. Sport's self-confidence is a forecast for consciousness, openness, and aggression. Besides, there is an important gender difference, where women are more concerned about cognitive behavior than men. Moreover, sports have shown that there is more somatic anxiety in individual sports than in collective. Finally, the level of stress based on the success of the sports athletes is significantly different. Exceptional athletes have fewer cognitive concerns and greater confidence than ordinary athletes. Motivation is an important factor in the significance of athletes' self-confidence. Two different motivations, both intrinsically and externally motivated, have been suggested by sports psychologists. Intrinsic motivation happens when internal instincts and personal decisions in the athlete lead to the desire to improve. The outside people and the surroundings of athletes provide external motivation for improvements such as fame, money, or the fulfillment of families' desires. The same thing happens with the athletes' self-confidence when motivation is increased. However, if athletes have not been motivated to attain objectives, or to succeed during training, the self-confidence and the role in the team may have been reduced. Fig. 1 shows the relationship between sports psychological pressure and Performance.

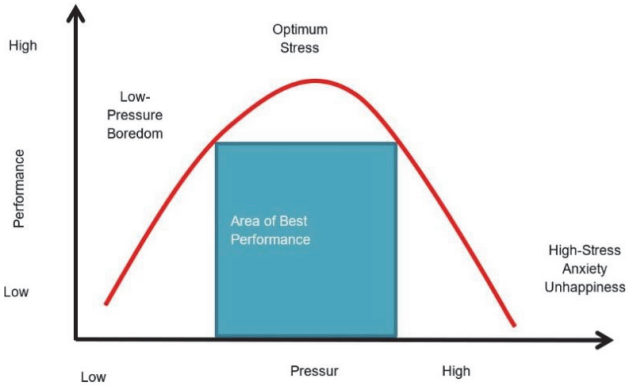


**Figure 1** The relationship between sports psychological performance and pressure

Traditional psychological diagnosis and surveillance methods include questionnaire surveys, observation on the spot, follow-up assessment, case analysis, expert interviews, oral reports, etc. The most recent psychological diagnostics and monitoring methods include as follows: (1) brain image. Valuable inputs, like the competitive state of brain processing information and efficiency, can appear from brain image analysis technology. (2) Athletes. Topographical map of EEG (BEAM). (3) ET (Envelope tracking). ET Technology used for Ultra Slow Fluctuation EEG. The organizational theory emphasizes the brain function importance in sports training and competition regulation during motor skill formation. The ultra-slow-scale brain wave analysis technology can be employed to evaluate sports ability, intensity of training, stress levels, central fatigue, and learning ability (4) Heart rate

variability of athletes. Fig. 2 shows the importance of sports psychology.


**Figure 2** Importance of sports psychology

In the paper, the questionnaire survey and sports training have been assessed using structural equation modeling. The proposed system's main objective is modeling the data at two or more levels to prevent the independence of the assumed observations suggested by the ignorance of the clustering variable. That is, a higher relationship is expected among athletics participants in a cluster compared with individuals. Data has been analyzed utilizing SMSEM. Firstly, a sequence of Confirmatory factor analysis (DFA) has been experimented to test the simple structure utilizing aggregate information. Data has been analyzed employing Maximum Likelihood (ML) calculation which outcomes in exaggerated evaluation when residual observations are interconnected. The SMSEM method includes random variations because of athletic individual differences and random variation of team. The individual refers to the response of sportsperson *j*, who refers to team *i* on item *x*. The function between team random component $x_{W_{ji}}$ and team random variable $\left(x_{C_i}\right)$ is expressed as follows.

$$x_{ji} = x_{C_i} + x_{W_{ji}} \tag{1}$$

Fig. 3 shows the proposed conceptual model. Individuals are members of a similar group, who have an improved relationship compared to players from various groups. Since the entire variance and the covariance matrix is split up between levels, these attributes are orthogonal. A simple structure between levels has been calculated utilizing Eq. (2) and Eq. (4) as follows.

$$x_{ji} = \wedge_i \eta_{ji} \tag{2}$$

As inferred from the Eq. (2), *j* and *i* are the person and clustering unit correspondingly. $x_{ji}$ is a measured variables vector. $\wedge_i$ is a factor loadings matrix linking the estimated factors to respective latent factors between levels of the analysis. Consequently, the part of the model is calculated as follows.

$$\eta_{ji} = \beta_i + C_i \eta_{ji} + \zeta_{ji} \tag{3}$$

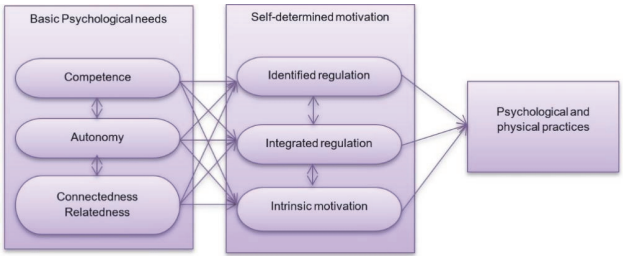


**Figure 3** The proposed conceptual model

As shown in Eq. (3), it involves the calculation within the level model of the latent response $X_{ji}$, which is the part of a basic factor model. It involves random diverts $\beta$ that differ over groups *i*. $C_i$ consists of a factor loadings matrix at within levels and $\zeta_{jl}$, unique and basic factor model residual values within the level. The structure part of the model is calculated utilizing the following Eq. (4).

$$\eta_{ji} = \mu + \alpha_i \eta_{ji} + \zeta_i \tag{4}$$

As discussed in Eq. (5) which contains all random coefficients of intercepts $\beta$ and slopes C, that differ over groups *i*, the mean $\mu$ and the factor loadings calculated from the variance of the cluster and matrix of covariance $\alpha$ . $\zeta_l$ consists of unique and basic factors residual values between the analyzing levels.

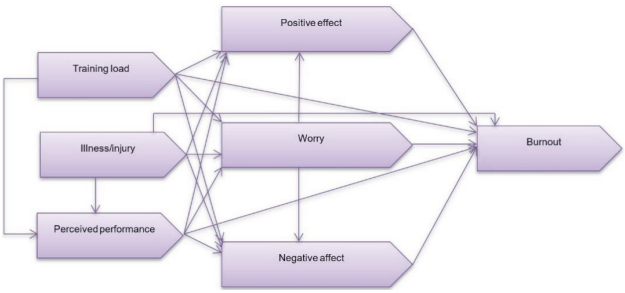


**Figure 4** Hypothesized model

Fig. 4 shows the hypothesized model for athletics participating. The standard approach for calculated model fits in Structural Equation Modeling, which includes the utilization of a probability ratio measurement. This tests the null hypothesis that data-based model fits as calculated the Maximum Likelihood. Fitting function is equal to the fit of the standard model and therefore there is no variance between the perfectly fitted model and data-based model.

$$R_{ML} = F_{ML}\left(\theta\right) - F_{ML}\left(\theta_w\right) \tag{5}$$

The standard approach applied to nested clusters would be recommended, group model would control total model fit probably for high sample size and therefore total model fit uncertainly downplays misfit because of the analysis level. The approach partially saturated fit would limit the discrepancy between saturated and estimated model in the same level. A chi-square assessment would test for the upwards level discrepancy, which is shown in the following equation.

$$Y^2 = F_{ML}\left[\sum_a\left(\tilde{\Theta}_W\right),\sum_S(\Theta)\right] - F_{ML}\left[\sum_a(\Theta_W),\sum_S(\tilde{\Theta}_W)\right] \quad (6)$$

As derived in Eq. (6), $F_{ML}$ denotes the Maximum Likelihood function with a potential misfit. The proposed model experiments the likelihood that item $v_i$ refers to a factor $\eta_j$, which accepts a direct effect from a covariate dichotomy. $y_j$ has a response probability of 1 as shown in the Eq. (7) below.

$$v_{ji} = \lambda_i * \eta_j + l_i * y_i + \varepsilon_{ji} \quad (7)$$

As shown in Eq. (7), $\lambda$ is the factor loading of item $v_i$ on factor $\eta$ with a mean of 0, $l_i$ is the covariate effect on an item $v_i$ at values $y_j$. The likelihood of correct responsiveness is then evaluated as follows.

$$Q\left(v_{ji}=1\,|\,\eta_j, y_j\right) = 1 - F\left[\tau_i - \lambda_i * \eta_j - l_i * y_j\right) * \theta_{ii}^{-1/2}] \quad (8)$$

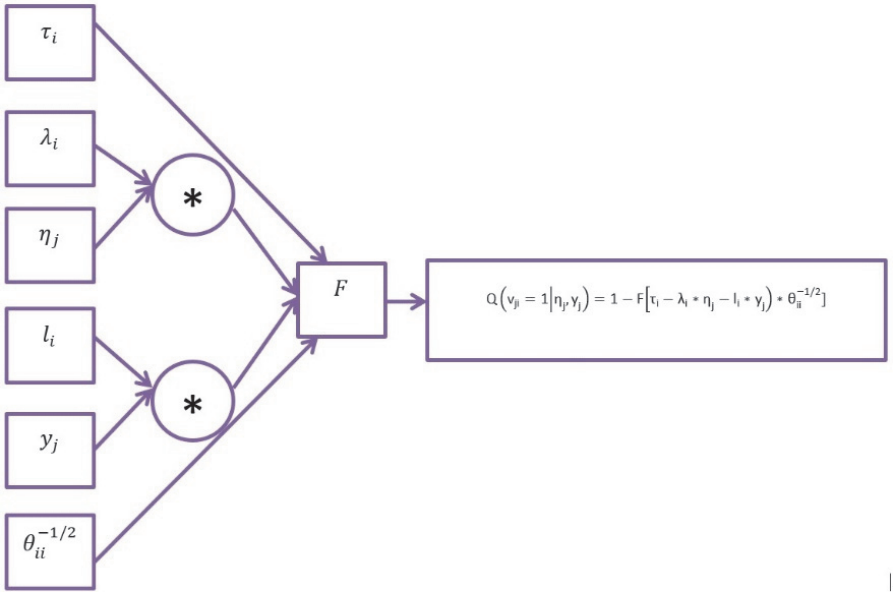


**Figure 5** Probability distribution function

As expressed in the Eq. (8), Fig. 5 demonstrates the probability distribution function, $\theta_{ii}$ is the item residual variance, $\tau_i$ is the threshold value, F means the normal distribution function. $\lambda_i$ is the factor loading, $\eta_j$ denotes the factor mean, and $l_i$ is the covariate effect on item i.

After evaluating the above measuring models, the final aim is to build a structural model in which the latent variable means of the one-dimensional mathematical structure at the analytical level in sports psychology regressed for athletics. The urban public sports services of sports psychological demand have been examined. Urban public sports services are offered only through regional national fitness services, and their focus and direction for development are far from the demand of current urban area-based sports. The efficiency of the public supply depends on mode, content, and decision-making. The following section 4 discusses the experimental results.

## 4 VALIDATION OF NUMERICAL RESULTS

### 4.1 Overall Performance Ratio

There is an important correlation between the three structures and mental toughness determined by athletes in the results. Confidence and self-efficacy have shown mental toughness, when athletes have been committed to achieving goals and take responsibility for objective setup [29]. Cognitive/Emotional control exhibited mental toughness in difficult situations when athletes never give up and never lose focus during the game. Finally, positive mental toughness is demonstrated by the interpretation of possible threats by athletes as new success opportunities and by their trust in their abilities. The study concluded that the motivation to continue working and training increased when the athletes were reliant in their ability, which had efficient self-perceived perception. The proposed method has a high-enactment ratio when compared to other existing methods. Integration of multimedia data analysis into sports teaching and tracking systems improves coaching and performance evaluation. It also includes techniques of video analysis, biomechanical analysis, voice and audio analysis, player tracking, virtual reality, machine learning, interactive dashboards, biometric data monitoring, and seamless integration with wearable devices. This method improves data-driven insights, personalized training, and decision-making in sports teaching and tracking system. Tab. 1 demonstrates the overall Enactment ratio of the proposed SESEM method. The connection between quantitative and qualitative change-oriented feedback about sporting motivation.

There has been a significant relationship between changing and promotional qualitative feedback in the athlete's self-confidence. The study recommended a significant correlation between changing and promotional quality feedback for autonomy across training for the athlete.

**Table 1** Overall enactment ratio

| Number of Datasets | S-SLP | BEI | TMT-LSA-KMC | APSI | PSIS-Y-SF | SESEM |
|---|---|---|---|---|---|---|
| 10 | 67.6 | 45.1 | 65.2 | 66.2 | 67.5 | 69.5 |
| 20 | 79.7 | 41.2 | 53.4 | 65.1 | 62.4 | 60.6 |
| 30 | 84.9 | 59.3 | 72.6 | 75.3 | 77.5 | 79.7 |
| 40 | 71.6 | 63.4 | 66.9 | 43.4 | 53.3 | 72.7 |
| 50 | 82.8 | 84.5 | 81.5 | 90.5 | 92.2 | 98.8 |

### 4.2 The Influence Factors of Urban Public Sport Service

To enhance the efficiency of urban public sports services around mass sports facilities per capita and the proportion of national physical fitness monitors. In the development of social expansion, the influence of different systems is defective, urban public sports own development strategies, leading to a delay in urban public sports services that are close to the citizens. By an efficiency assessment, the influence factors can be identified and public sports resources rationally and efficiently allocated. Tab. 2 shows the influence factors of sports service.

**Table 2** Influence factors of sports service

| Influence factors | Number of people selection | Percentage |
|---|---|---|
| Site Facility | 130 | 30 |
| Presence of Instructor | 20 | 5 |
| Practice effect | 43 | 15 |
| Exercise atmosphere | 72 | 9 |
| Friends and Family influence | 50 | 10 |
| Free time | 55 | 11 |
| Community Organization | 100 | 20 |

The selection of evaluation indicators should meet the principle of quantifying indicators, collecting data, and operating methods. Resources used to achieve the best possible benefit index for your urban public sports service. The government is committed to the concept of "services-oriented governance" in constructing an urban public sport system and to moving ahead with structural supply reform.

### 4.3 Proficiency Ratio Analysis

In the process of public service purchasing for community sports, the community masses are the users and the ultimate object of public service procurement of community sports. Improving the per-capita area of the mass sports facilities and the share of the investment in national fitness monitoring to enhance the efficiency of urban public sports services. Under the framework of the reform of the supply-side structure, urban public sports resources can be distributed by regional large-scale planning from actual demand across the entire region to improve supply efficiency and maximize the efficiency of low inputs and yields. Fig. 6 demonstrates the Proficiency ratio analysis of the proposed SMSEM method.

Tab. 3 shows the initial status and the final status of aggression has measured and recorded, namely physical aggression, verbal aggression, anger, and hostility. The statistics has collected and analyzed around the 12 weeks of the training program.

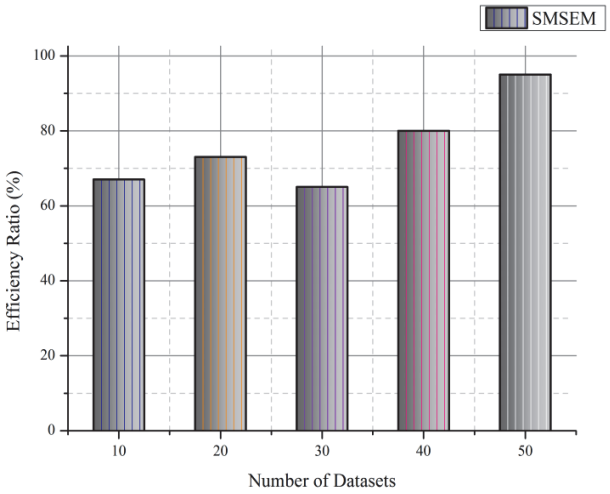


**Figure 6** Proficiency ratio analysis

**Table 3** Sports participation and psychological training group on the aggression of sports athletics

| Variables | Pre-test | Post-test | Difference |
|---|---|---|---|
| Verbal aggression | 24.5 | 22.1 | 2.4 |
| Physical aggression | 17.5 | 14.4 | 3.1 |
| Hostility | 22.2 | 20.8 | 1.4 |
| Anger | 23.5 | 22.6 | 0.9 |

The correlations between basic needs satisfaction, coaching and sport satisfaction are shown in Tab. 4. Coach data for athletes in the lower triangle are given in the upper triangle and correlation values. For most of the coach's variables, significant correlations have been obtained while athletes showed correspondences among all variables. Initially, by evaluating the relationship between the items analyzed and the latent factors, a three-factor measuring model tested by CFA (SEM Step 1).

**Table 4** Coach-athlete relationship

| Variables | Coaches | Athletes | Differences |
|---|---|---|---|
| Commitment | 7.5 | 6.7 | 0.8 |
| Closeness | 5.6 | 6.6 | 1 |
| Complementarity | 6.8 | 7.2 | 0.4 |
| Competence | 7.1 | 7.4 | 0.3 |
| Autonomy | 6.2 | 6.4 | 0.2 |
| Relatedness | 5.4 | 5.7 | 0.3 |
| Individual performance | 5.2 | 5.8 | 0.8 |
| Training instruction | 5.1 | 5.6 | 0.5 |
| Personal treatment | 6.3 | 4.5 | 2 |

The proposed Semantic Multilevel Structural Equation Modeling (SMSEM) provides the new structural model for sports psychology with effective supply-side reform of urban public sports services. The proposed questionnaire and feedback session give the guidelines of sports training, psychological demand with efficient facilities.

## 5 CONCLUSION

This paper presents the Semantic Multilevel Structural Equation Modeling (SMSEM) for the sports psychological demand in urban public sports services by artificial intelligence and multimedia data analysis. The results showed how psychological abilities and the performance of athletes affect and influence them. Moreover, the capacity to improve and develop at greater levels has been achieved when athletes can control their actions and focus on competition. Athletes can control their thoughts and feelings, who started to believe in themselves. The significance of two psychological abilities can identify the performance of athletes, build confidence, and prevent overthinking, which has been described. Sports psychologists explained that the development of mental toughness requires self-confidence. Finally, the establishment of high-level realistic objectives, as athletes have improved, helped to understand overtime improvements. The principle of equalization of public sports services to adhere to urban areas as well as ensure that citizens have nearly equal public sports services in urban areas. This paper builds a model of efficiency in urban public sports. Although the government has concentrated on the issue of the public service, the issues associated with the development of public sports urban services remain under exploration. In the future, authors will increase the sample size and incorporate empirical evidence from remote areas such as villages and rural areas into the study. The application advantages of intelligent sports teaching tracking system in sports teaching are very significant, and are worthy of further promotion and application. When the intelligent sports teaching tracking system is applied, teachers should always respect the learning ability and development needs of students, which achieves classification guidance and hierarchical teaching. Big data intelligent analysis technology is applied to collect and process sports information. Simultaneously, computer virtual reality technology is utilized to achieve some simulation functions, better addressing issues in physical education teaching.

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