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EXPLORING THE FACTORS REGULATE GRASSROOTS FOOTBALL DEVELOPMENT IN ANHUI PROVINCE, CHINA WITH STRUCTURAL EQUATION MODELING

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Abstract

Against the background of the overall decline of Chinese football, grassroots football in Chinese schools has become an important position for the revitalization of Chinese football. What factors will affect the development of school grassroots football and how to avoid risks are issues that need to be solved urgently. Based on the theory of Sport success factors and taking Anhui Province as an example, this article constructs a model of factors influencing the development of grassroots football in Chinese schools, studies the support policies at the macro level, coach's education and football competition at the meso level, and football at the micro level. The relationship between schools and football clubs and grassroots football sustainability. The empirical results show that government policies, education of grassroots football coaches, grassroots football competitions, football layout schools and social football clubs are the influencing factors of grassroots football development in China. In this regard, the article proposes targeted implication in four aspects: policy support for

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grassroots football development, competition management, coach training management and school-enterprise cooperation.

Keywords：Chinese Grassroots Football Development, Factors Regulate.

Introduction

Football development in China has been rapid and very significant to its socio- economic State. In recent years, the Chinese professional football league has entered a period of rapid development and become increasingly professional and commercialized. A lot of economically strong companies bought out clubs or introduced expensive overseas aid along with famous coaches to support participation in the Super League. This resulted in the Chinese football super league attracting a greater number of football fans to watch it in the stadia or on television. However, the ranking of the national Chinese football team is unsatisfactory because it has not reached the World Cup finals ever since it did for the first time in 2002.

In order to promote the development of Chinese football, from 2005 the Ministry of Education of the People's Republic of China required every Province to launch school grassroots football activity and regard school as the important football training centre so that students would accept football education at their own school directly. From 2007 to 2014, the layout of China's school football projects involved 49 national football approved foundation cities, 68 provincial-level basic football approved foundation cities, 3 football pilot counties and 10 provincial-level football units. The number of schools that launched football leagues in China reached 5,084, comprising 99 universities, 406 high schools, 1,497 junior high schools, and 3,082 primary schools. There were 8,849 boys and 1,911 girls participating in football in primary schools (China teenage campus football work group office, 2018). However, with the development of the school grassroots football, it exists some prominent problems. For example, after enhancing the quantity of the grassroots football participants, how to improve their football ability efficiently; How the grassroots football school coordinates with social football club to provide better service for students; How to make use of competition to extend the influence force of grassroots football in China; Which factors can impact the school football when it cultivating football talent for China and so on. These problems should be resolved.

Anhui Province is a major Chinese province since ancient times. It has a population of 63,639 million and an area of 140,000 square kilometres. Since there is currently no professional football club in the Chinese Super League from Anhui Province, the grassroots football talent training system is based on the school-led grassroots football training system planned by the Chinese Ministry of

Education. In the new grassroots football development plan, six administrative regions in Anhui Province are classified as grassroots football development zones. This is higher than the national average. In addition, seven cities in Anhui Province have been appointed as grassroots football development cities (including the above six grassroots football areas). This indicates that more attention is being paid to the development of grassroots football in Anhui than many other provinces by the Chinese government. Since this is the case, the construction model of grassroots football development system and factors that affect its development there deserve analysis and discussion.

Methods

Instrument

This research uses research methods such as Documentary and archival research and Quantitative research to study the influencing factors of school grassroots football development in Anhui province. Questionnaire of this study was adapted from Zhang (2015). According to the degree of sports success factor theory, the questionnaire was sub-divided into degree, and individual questionnaire items were modified according to the development environment and characteristics of grassroots football in Anhui Province. In the pre-testing stage of the questionnaire, the questionnaire dimension was revised through exploratory factor analysis, and items that failed to meet the load were deleted. After that, the data was tested for reliability (Cronbach $\alpha > 0.7$), collinearity diagnosis (VIF <10) and normal distribution analysis. Following a series of tests, the heading items of questionnaire were determined and used for empirical analysis. In the empirical research stage, Smart-PLS software was used to perform confirmatory factor analysis on the structural model, including testing the reliability of the model (Cronbach $\alpha > 0.7$), composite reliability (CR> 0.7), structural validity and aggregation validity (AVE> 0.5), interpretation ability ($R^2 > 0.65$, $F^2 > 0.325$) and prediction ability ($0.02 < q^2 \leq 0.15$). Based on the results of confirmatory factor analysis, fit, corrections were carried out, and an explanation was produced for the proposed model.

Sample

This research is divided into two stages: a pilot study and an empirical study. Six cities in Anhui Province participated in the Pilot Study, and seven cities participated in the empirical study stage.

Drawing on Yan and Yongjin (2007) and Wong (2013) that if using this method to estimate the minimum recommended sample for social science survey models there should be at least 100, but preferably above 230. Sample size for the pre-test research stage was set at 310, and included 90

grassroots football managers, 210 grassroots football coaches, and ten football experts. In the empirical research stage, the total sample size of seven cities was set at 560, with 80 samples per city. In addition, ten Chinese football experts were invited to participate in the survey. Therefore, the total number of samples in the empirical research stage was 570.

Wong (2013) said that survey sample participants should be consistent with the field of study itself. The development of grassroots football is inextricably connected to the field of managerial leadership, not only participating in formulating policies, but also in managing staff. Grassroots football coaches are direct participants in grassroots football and an important factor in its development. They provide teaching for students, and they are the transmitters of grassroots football ideology. Football experts are the think-tank for the development of grassroots football. They have a high academic level and considerable professional experience. This is the reason why the sample population for this study was based on football experts, grassroots football managers and grassroots football coaches.

Data analysis

SPSS 25.0 software was used to perform exploratory factor analysis to determine if the dimension of the measurement index was consistent with the dimension of the designed measurement index, and as necessary, inappropriate items were deleted. After correcting the measurement model, empirical research was carried out. Smart-PLS software was used to perform confirmatory factor analysis on the structural model in the empirical research stage, including test model reliability, structural validity and aggregation validity, fitting degree, interpretation ability and prediction ability. Finally, based on results of confirmatory factor analysis of the analysis results, the model was fitted, corrected, and explained.

Findings and Discussion

In this section, taking managers and coaches of grass-roots football layout cities as pre-test research objects, pre-test research on the conceptual model of influencing factors of grass-roots football development was conducted. After pre-test completion, an empirical study was conducted. Smart-PLS software was used to perform confirmatory factor analysis on the factor structure model and to make necessary corrections to the model.

Exploratory factor analysis and reliability test

Kaiser (1974) opines that on a range, a KMO value greater than 0.90 is very suitable for factor

analysis, between 0.80 and 0.90 is suitable for factor analysis, between 0.70 and 0.80 is still acceptable for factor analysis, but that between 0.60 and 0.70 is barely suitable for factor analysis, while between 0.50 and 0.60 is not suitable for factor analysis, and anything less than 0.50 is very unsuitable for factor analysis. As shown in Table 1, the KMO value of this study was 0.971, the statistics of the Bartlett sphere test were 16234.937, the degree of freedom (df) was 406, and the significance probability (sig) was 0.000, less than 1%. Test results show that the KMO sample measurement results were significant, and the correlation matrix of the data was not a unit matrix, thus being very suitable for factor analysis.

Table 1: *KMO and Bartlett's test*

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.971
Bartlett's Test of Sphericity	Approx. Chi-Square	16234.937
	df	406
	Sig.	0.000

SPSS 25.0 software was used here to extract factors by principal component analysis method and an exploratory factor analysis was carried out on the data of factors influencing the development of grassroots football. Here, the criterion of Pizam, Neumann, and Reichel (1978) was used to select variable measurement items during exploratory factor analysis. They state that the item has convergent validity only when the factor load factor is greater than 0.6. Meanwhile, the index of variance inflation factor (VIF) was used to test multicollinearity between measured variables. The judgment followed the viewpoint of Myers (1990) who pointed out that variables have obvious multicollinearity when VIF is greater than 10. According to the calculation results in Table 2, Q 30, Q31, Q32, Q11, Q17, Q8, Q6, Q2 were deleted. Each factor covered a different number of measurement variables greater than 0.6, and the factor load value in other dimensions did not exceed 0.6. All the remaining items had reached a standard of VIF less than 10.

Table 2: Rotated Component Matrix[a]

	Component				
Item	1	2	3	4	VIF value
Q1	**0.737**	0.378	0.335	0.203	5.706
Q3	**0.786**	0.308	0.346	0.248	8.733
Q4	**0.747**	0.380	0.359	0.261	9.176
Q5	**0.717**	0.419	0.353	0.225	6.656
Q7	**0.773**	0.352	0.309	0.261	7.589
Q9	**0.737**	0.408	0.349	0.252	9.552

Q10	**0.701**	0.462	0.318	0.267	8.611
Q12	**0.680**	0.449	0.306	0.265	5.622
Q13	0.371	**0.771**	0.283	0.218	7.690
Q14	0.413	**0.735**	0.291	0.184	6.946
Q15	0.362	**0.773**	0.308	0.181	7.621
Q16	0.335	**0.789**	0.302	0.181	6.458
Q18	0.276	**0.826**	0.243	0.215	5.794
Q19	0.356	**0.777**	0.282	0.253	7.728
Q20	0.343	**0.736**	0.268	0.277	5.437
Q21	0.361	**0.668**	0.244	0.260	3.206
Q22	0.482	**0.642**	0.251	0.313	5.115
Q23	0.307	0.176	**0.737**	0.208	2.687
Q24	0.298	0.306	**0.745**	0.223	5.532
Q25	0.300	0.324	**0.757**	0.257	6.745
Q26	0.299	0.279	**0.787**	0.205	7.576
Q27	0.309	0.295	**0.774**	0.236	8.649
Q28	0.404	0.363	**0.672**	0.211	5.388
Q29	0.428	0.350	**0.708**	0.168	6.218
Q33	0.289	0.264	0.318	**0.737**	4.011
Q34	0.276	0.249	0.303	**0.718**	2.534
Q35	0.239	0.242	0.254	**0.797**	3.003
Q36	0.229	0.233	0.121	**0.712**	2.014
Cumulative %	26.919	52.868	71.750	**83.356**	

Pre-testing research mainly used index half-correlation coefficient and Cronbach (α) coefficient that reflected internal consistency, to perform reliability analysis on the data. Using SPSS17.0 software, the pre-test sample macro-level (policy and support), meso-Level (training and competition), micro-Level (school and club) and goal four half-variable correlation coefficients and were analysed.

From the data in the Table 3, the corrected half-fold correlation coefficients of all latent variables in the total sample were all greater than 0.8. Results show that all dimensions of the evaluation model were reliable. Meanwhile, the latent variable Cronbach (α) coefficient of the total sample is greater than 0.8, which indicates that the sample measurement variables had high internal consistency.

According to the test results, the Anhui Province grassroots football development influencing factor model had credibility, and the structure of the questionnaire was reliable.

Table 3: *Reliability test*

Latent variable	macro-level (policy and support)	meso-Level (training and competition)	micro-Level (school and club)	Goal
Half correlation coefficient	0.972	0.962	0.920	0.860
Cronbach (α)	0.987	0.977	0.964	0.882

Reliability and validity test

Nunnally and Bernstein (1994) pointed out that when assessing the reflective measurement model, the primary goal is to assess its internal consistency, that is, the Construct Reliability (CR value). In general, scholars believe that when the CR value is greater than 0.7, the latent variable has internal consistency reliability.

Results showed that there were four latent variables in the model. The minimum value of the α coefficient of the latent variable was 0.845 (sustainable development goal), and the maximum value was 0.970 (macro), which were all greater than the requirement of 0.7. The α coefficient of each second-level latent variable influencing factors was 0.980, which had very good reliability. In terms of internal consistency, the CR values of the four latent variables were Macro-Level (Policy and Support) 0.974, Meso-Level (Education and Competition) 0.964, Micro-Level (School and Club) 0.957, and Goal 0.898. It can be seen that the four CR values were all greater than the requirement of 0.7. Therefore, the measurement model of the influencing factors of grassroots football development had a good internal consistency reliability.

Validity testing of the structural model is divided into aggregation validity, and structural validity. Aggregation validity is considered the most representative in evaluating average variation extraction amount (AVE value). AVE value is the sum of the square of the load of the standardized factor divided by the number of indicators. Fornell and Larcker (1981) and Bagozzi and Yi (1988) have suggested that the structural model has aggregation validity when the AVE value of the structural model is greater than 0.50. It can be found from Table 4 that among the four latent variables in this study, the largest AVE value was Macro-Level (Policy and Support) 0.827, and the smallest AVE value was 0.751 of Meso-Level (Education and Competition), both were greater than the 0.50 requirement. Therefore, it may be concluded that the measurement model of the factors affecting the development of grassroots football had aggregation validity.

Table 4: *Standardized factor loading and reliability*

Latent	（AVE）	Cronbach (α)	CR
Macro-Level	0.827	0.970	0.974
Meso-Level	0.751	0.947	0.964
Micro-Level	0.760	0.957	0.957
Goal	0.690	0.845	0.898

Structural validity is also known as discriminant validity. Its significance lies in the fact that the manifest variable index contained in one latent variable needs to have low correlation with the manifest variable indexes in other latent variables (Churchill Jr, 1979), (Anderson & Gerbing, 1988). According to the difference validity test table in Table 5, it is known that square roots of the four structural variables of Macro-Level (Policy and Support), Meso-Level (Education and Competition), Micro-Level (School and Club) and Sustainable development target were 0.830, 0.909, 0.867 and 0.872 respectively, all of which were greater than their correlation coefficients with other structural variables. Therefore, these four structural variables had discriminant validity.

Table 5: *Discriminant validity table*

Latent variable	Goal	Macro-Level (Policy and Support)	Meso-Level (Education and Competition)	Micro-Level (School and Club)
Sustainable development target	**0.830**			
Macro-Level (Policy and Support)	0.590	**0.909**		
Meso-Level (Education and Competition)	0.550	0.851	**0.867**	
Micro-Level (School and Club)	0.552	0.839	0.791	**0.872**

Structural model test

After completing the measurement model test of influencing factors of grassroots football development, further analysis of the model based on path coefficients will be carried out here to verify the hypothesis in the conceptual model. In the process of structural analysis, as well as testing causality of the hypothesis in the conceptual model, it is highly important to test the quality of the structural model. If structural model quality is poor, even if each cause-and-effect relationship is

significant, the meaning or explanatory power of the conceptual model will be biased. When checking the quality of the structural model in PLS-SEM, it should be evaluated from two aspects. One relates to the predictive ability of the model, the other relates to the explanatory ability of the model. Hair Jr, Sarstedt, Hopkins, and Kuppelwieser (2014) proposed that testing the structural model occurs across five stages. These are, collinearity diagnosis of the structural model, testing significance of the path coefficient, evaluating R2 value, evaluating interpretation effect value f2, and assessing the prediction correlation Q2.

Smart-PLS software was used here to calculate variance expansion coefficient (VIF value) of each measured variable. Myers (1990) suggestions were used as the basis for judging, he believed that when VIF was greater than 10, the variables had obvious multicollinearity. It can be seen from Table 6 that VIF values of all indicators of manifest variables were also less than 10. Therefore, it is possible to conclude that there was no collinearity problem in the outer VIF values in the structural equations of grassroots football influencing factors, which would not adversely affect the path coefficient estimation of structural models at a future time.

Table 6: *VIF Values*

Variables	VIF	Variables	VIF	Variables	VIF	Variables	VIF
Macro 1	4.469	Meso 1	4.687	Micro1	4.617	Goal1	3.115
Macro 2	6.190	Meso 2	5.111	Micro 2	4.636	Goal 2	2.978
Macro 3	6.501	Meso 3	5.800	Micro 3	3.660	Goal 3	2.358
Macro 4	5.934	Meso 4	5.718	Micro 4	4.595	Goal 4	1.510
Macro 5	4.755	Meso 5	4.394	Micro 5	3.541		
Macro 6	6.315	Meso 6	6.230	Micro 6	3.911		
Macro 7	5.973	Meso 7	3.724	Micro 7	2.127		
Macro 8	3.105	Meso 8	2.591				
		Meso 9	1.605				

In a structural equation model, the strength of the causal relationship between each construct can be expressed by its standardized path coefficient (path coefficient). The value of the path coefficient is usually between -1 and 1, and the positive and negative signs indicate positive or negative influence of independent variables on dependent variables. In addition, for the value of the path coefficient to offer explanatory significance, its t value must be tested. If t value is greater than 1.96, it indicates that the path coefficient has significant explanatory significance. It can be seen from Table 4.28 that factors influencing the development of grassroots football have a positive impact on its development effect. The path coefficient is 0.6, and the t value of the path coefficient is 20.521, thus greater than 1.96.

In PLS-SEM, when testing the quality of structural models, test indicators can be roughly divided into two categories, these are the index for verifying explanatory ability of the structural model and the index for testing predictive ability of the structural model. Indicators for testing explanatory ability of the model include coefficient of determination (R^2 value) and effect value f^2.

In academic research in social science-related fields, it is generally required that R^2 value is close to 0.25, which indicates that the model has explanatory power. When R^2 value is close to 0.5, it means that the model has strong explanatory power (Hair Jr et al., 2014). As seen in Table 7, R^2 values in the structural model of the factors influencing the development of grassroots football in Anhui Province is 0.36, thus it falls between 0.25 and 0.5. Because this research focuses on the impact of policies and social organization systems, and as such belongs to the category of social science, the explanatory power of the structural model is acceptable. According to Cohen (1988), evaluation principle of f^2 value is identified as a small effect when $0.02 < f^2 \leq 0.15$, a medium effect when $0.15 < f^2 \leq 0.35$, and a big effect $f^2 > 0.35$. Therefore, it can be seen from Table 7 that the value of effect of exogenous latent development factors (exogenous latent) on the development effect of endogenous latent (endogenous latent) interpretation effect f^2 is 0.564, showing that the former has very good explanatory ability for the latter.

Predictive correlation refers to the ability of the model to accurately predict the value of reflective internal factors (Geisser, 1974). Stone-Geisser Q^2 value can be used when estimating the accuracy of the reflective internal cause construct and the predicted value of each index to which it belongs (Geisser, 1974), (Stone, 1974). Henseler, Ringle, and Sinkovics (2009) suggested that in structural models if Q^2 value of the reflective dependent construct is greater than 0, it means that the structural model has a predictive correlation with the reflective dependent construct. The prediction effect value q^2 is an indicator for evaluating the amount of prediction correlation effect. Its formula is:

$$q^2 = (\overline{Q^2}_{included} - \overline{Q^2}_{excluded}) / (1 - \overline{Q^2}_{included})$$

According to Hair, Henseler, Dijkstra, and Sarstedt (2014), the q^2 prediction effect value evaluation principle asserts that if $0.02 < q^2 \leq 0.15$ then it represents the predictive correlation of exogenous latent to the endogenous latent in the structural model, if $0.15 < q^2 \leq 0.35$ then it represents the exogenous latent pair endogenous latent has a predictive correlation with moderate effect, and if $q^2 > 0.35$ then it represents that the predictive correlation of exogenous latent, with a very good effect on endogenous latent. It can be found from Table 7 that the q^2 value predictive effect of influencing factors of grassroots football development on its own development is 0.326. Therefore, in the

structural model, the influencing factors of grassroots football development have a good predictive correlation with its own development.

Hu and Bentler (1998) believed that the value range of SRMR lies between 0.0 and 0.1. When SRMR is less than 0.08, the model can be well-fitted. In theory, when RMS value is close to 0, it indicates that the model is well-matched. In practical applications however, when RMS value is lower than 0.12, it can indicate that the model is well-matched (Hair Jr et al., 2014).

It can be seen from Table 7 that the SRMR value of Anhui Province grassroots football development influencing factor structure model is 0.077, which is less than 0.8, demonstrating the model is well-fitted. Where RMS value is 0.192, even though it is greater than 0.12, the difference is not considered large. Therefore, the institutional model fit can be accepted, thus meeting academic requirements for model fit.

Table 7: *Structural Model Evaluation and Identification Table*

Hypothesis	H4
Relationship	Factors Regulating/development effect
Path coefficient	0.6
T value	20.521
Decision	Done
R^2	0.36
f^2	0.564
q^2	0.326
95% CILL	0.541
95% CIUL	0.657
Model Fitness	SRMR = 0.077 RMS = 0.192

Discussion

The construction and evaluation of influencing factors of school grassroots football will be comprehensively shown from the perspective of developing a management system of grassroots football, from top level management, down to individual team members. To achieve the goal of cultivating high-level football talents and promoting sustainable development of grassroots football, it is necessary to support and coordinate three factors: management, execution, and participant effort. Current research on influencing factors related to the field of world sports is still immature. Scholars have yet to derive a unified influencing factor model for sports development in different countries (De

Bosscher, De Knop, Van Bottenburg, & Shibli, 2006). In research of an abundance of literature, it was found that only a few global scholars have focused on studying the influencing factors of their country's top sports levels. These few then attempted to summarize a unified model to provide a theoretical basis for the development of national sports. It was believed by some of them that many factors contributed to the success of international sports, but that classifying them was complex. Performance in top sports levels requires a combination of genetic qualities, living environment and physical conditions (Seppänen, 1981). Genetic qualities can explain differences between men and women, young and old, tall, and short, and even between ethnicities. However, they cannot explain why Norwegians are more active than Italians, and why African Americans perform better in sports than people in Nigeria or Mozambique (De Bosscher et al., 2006)

De Bosscher, De Knop, and Heyndels (2003) propose that factors determining the success of top sportspersons can be divided into the following three levels:

a) Macro level: the social and cultural background of people's lives; economic welfare, population, geography and climate change, degree of urbanization, political and cultural systems.
b) Meso-level: sports policies and politics; the level where well-considered sports policies may influence long-term performance.
c) Micro-level: the individual athletes (genetic qualities) and their close environment (parents, friends, coaches); where some factors can be controlled (such as training techniques or tactics) and others cannot be controlled (such as genetics).

Through analysing the current popular international sports development success factor index model, the following outline is given to assist in building a school grassroots football development influencing factor index model:

1. Factors and indicators for the successful development of sports need to be classified at different levels.
2. Index models are affected by political, legal, cultural, genetic, institutional, and other factors in different countries, and there will be different index bases and index contents.
3. Different sports have different development characteristics. For example, there are some differences in the economic and venue investment requirements for collective sports and individual sports.

For the purposes of this paper’s intended research, the primary focus is on the macro and meso level factors, and secondarily, the micro factors that can be controlled through policy and management. These three levels inevitably interact, and no factor can be completely isolated from the social and

cultural environment within the country. Therefore, there is overlap and interdependence between the three levels.

Very few studies outline prerequisites for success of national sports (Clumpner, 1994). However, Larose and Haggerty (1996) identified nine important factors that determine success and offered these factors to 15 Canadian experts for further study. The output of that study concluded that there was no single-factor model that led to success, no single model that can cover all countries, and no one model that can cover all sports. Based on the work of Clumpner (1994), Broom (1991) put forward three main factors leading to sports success: (1) financial support for training centres and personnel; (2) sports policy and management systems; (3) sports talents. He continued to sub-divide these three main factors, each of which includes multiple sub-factors. These sub-factors can be found at all levels, micro, macro and meso. For example, training time, trained full-time coaches, international competition, early talent discovery, sports population, good communication network, and so on.

The focus of this study is the analysis of the factors that influence the successful development of school grassroots football in Anhui Province. Therefore, the construction of an index model based on the above research theory will be based on the specific conditions of China's sports environment, laws, and culture.

During the literature search phase of this study on the construction of related models in China, it was found that most Chinese scholars are still at the descriptive stage of this problem. Few have studied the development of Chinese football by constructing influencing factors models. Just one example exists from Chinese scholar Zhang (2015), who divided the dimensions of factors affecting development of campus football in the "Shanghai Campus Football League Study" into six dimensions. Then, using the Delphi method, modified the factor dimensions as follows: job security (5 factors), member school (3 factors), competition (5 factors), training (3 factors), innovation development (5 factors), and development of external environment (4 factors).

Although this study divides dimensions of influencing factors from the perspective of basic knowledge and experience of people already involved in football development, the makeup and obvious variables in each dimension are coincidentally quite like those of grassroots football in Anhui Province. Therefore, Zhang's research has similar reference significance for the development of grassroots football there, the topic of interest in this research.

This research draws on dimensions of the above-mentioned international successful sports factors and on development factors of Chinese campus football leagues, along with contents of indicators, to construct specific factor indicators suitable for this study. However, while drawing on it, attention is

also paid to several other aspects. Firstly, the above-mentioned indicators of the international sports success factor model were originally used to measure success factors of top-level sports policies at the national level. Factors of top-level sports policies are different from the development of grass-roots football.

Secondly, although these indicators have been tested in different European and Asian countries, there are important differences in political and cultural backgrounds, government service systems, and political management systems between China and other countries, and so it is necessary to adjust structural variables and relationships in accordance with China's national conditions. To make the grassroots football development influencing factor index model conform to local football sports characteristics, the following differences must be considered when constructing the Anhui Province model:

a) Differences in development concepts. Grassroots football is supposed to allow children participate in football and through that, enhance friendships, expand the football population, and cultivate talents for the country's overall football level. However, in contrary, the development concept of the country’s top sports is solely to enable the country's top athletes win more gold medals in international competitions, such as the Olympic Games.

b) Differences in research objectives. This study focuses specifically on football. Previous research objectives included all sports.

c) Differences in research goals. Former research of success factors of top national sports attempted to explain the causes of sports success in all countries, and to establish measurable indicators of success factors. This study discusses the distinctly influencing factors of grassroots football development in Anhui Province, specifies its factors and establishes an index model.

Conclusion and Implication

The main conclusions of this research are as follows:

The conceptual model established in this research has a certain universal significance. In the samples of grassroots football layout cities and with respect to various types of staff participating in grassroots football, data analysis results indicate that the conceptual model has a certain degree of universal applicability.

Government policies and system management at the macro level are decisive factors affecting the development of School grassroots football in China.Current Situation of Anhui Province: The football management system in Anhui Province as well as all of China is a type of system that combines government and society under direct leadership of the central government. Output can embody the

will of the country, improve work efficiency and management transparency, and increase the mobilization of the enthusiasm of sports associations and other non-governmental sports organizations. The reason why grassroots football can be rapidly developed in various cities in Anhui Province at the present time is that the government's political intervention has already played a decisive role. The government's policies for students entering higher education and the green channels for teachers of retired football coaches have effectively stimulated the interest and motivation of young people regarding participation in grassroots football activities and have also provided a platform for people who hold football teaching skills but do not have diplomas.

Additionally, the grassroots football office jointly established by six provincial-level departments provides a multi-level guarantee for the development of football in the province. However, excessive government intervention has also suppressed the participation of social groups in management. The Anhui Province Grassroots Football Association and the Expert Committee appeared to do very little following their establishment and did not participate in any management or planning of Anhui Province's grassroots football. If this is the case, it is a measurable waste of resources.

Coach training at the meso level and grassroots football matches have played a role in promoting the development of school grassroots football in China. Current Situation of Anhui Province：Anhui Province actively participates in strict accordance with the national coach training plan. However, there are still problems such as incomplete construction of the training instructor team, lack of a unified training concept for training objectives, imperfect training curriculum settings, and imperfect student selection. Anhui Province has organized some grassroots football competitions, and various cities and schools have held grassroots football competitions, but these competitions have not been carried out regularly. From the organization and management of the competition to the competition system, from the quality of the referee to the competition system setting, there is a lack of unified planning and management.

The layout of grassroots football at the micro-level. Schools and social clubs are important factors for the development of school grassroots football in China. Current Situation of Anhui Province: Under the unified national policy, grassroots football schools have established a unified management structure. Schools have formed working mechanisms for intramural football activities in which their principals are mainly responsible, where the Academic Affairs Office and the General Affairs Office assist in management, and in which the physical education team implements specific football activities. However, some grassroots football schools have a confused division of work responsibilities, and they skirt around possible trouble areas creating an environment that is not conducive to the development of grassroots football.

The lack of a reasonable social football club management system in Anhui Province has led to many problems in social clubs including; the lack of a standardized market access system; the necessity to improve the level of club coaches; the lack of management of club coaches; the lack of scientific teaching plans; the relevant government department failed to properly supervise the club, etc.

Implication

Through the research on the development status, influencing factors, and structure of grass-roots football management in Anhui Province, a multi-faceted grassroots football development management system in Anhui Province is constructed to provide reference and inspiration for development research in China. The specific inspirations are as follows:

To carefully layout and consolidate the grassroots football promotion system. Provincial-level grassroots football-related departments should strengthen organization and management, apply equal emphasis on popularization and improvement, and promote the balanced development of male and female youth grassroots football in different regions. A unified set of youth football population standards should be developed, and the registration of student football players should be established.

To fully exert efforts and improve the social football club cooperating with layout school. Social football youth training institutions speed up their own standardized development, enhance their own service capabilities and sense of responsibility, actively connect with the government and schools' football-related work, optimize operation methods, identify their own shortcomings, improve operational effectiveness, achieve self-value improvement, and obtain a good industry. and social evaluation, and effectively promote the development of youth football. Schools should actively use the faculty of football clubs to cultivate the professional level of in-service football teachers in schools, jointly train students with football clubs, formulate reasonable cooperation methods, and plan development goals in a unified manner.

To strengthen the training and training of football teachers. In addition to the Chinese Football Association standardized grades level training of coaches, relevant departments should establish an online and offline campus football teacher training system in all levels of grassroots football teacher training, develop appropriate training courses, and formulate the selection and grades level of football coaches and lecturers. Regarding an assessment method for continuous professional development, they should establish a tracking mechanism and a continuous training mechanism for coaches following their initial trainings. To train more grassroots football coaches, relevant departments still

should continue to encourage football majors in colleges and universities in Anhui Province to participate in grassroots football training and refereeing during their school days.

To strictly manage and strengthen campus football competition systems. The responsibility should continue to deepen the construction of competition systems for integrating intra-school competitions, inter-school leagues, selective competitions, and international exchange competitions. The school should ensure that there are teams in the grassroots football schools, and regularly organize competitions to form male and female teams of various age groups throughout the grade leagues. Relevant departments ought to further improve elementary school leagues, selection competitions, and summer (winter) camp activities. Based on the best team in the country, grassroots football elite training teams for each group should be selected and constructed, and continuously improve the selection of grassroots football competitions mechanism should be carried on. The Department of Education and Sports Bureau of Anhui Province should both promote the construction of a unified league system and grassroots football competition management platform for youth in all Anhui Province cities by extracting and publishing real-time statistics and reports on competition activities in various regions. Relevant departments must formulate management standards for school student-athletes and sports teams that meet the national conditions, they should strictly enforce competition style and discipline, and strive to improve competition rules and regulations based on a reward and punishment method.

References

Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological bulletin, 103*(3), 411.

Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the academy of marketing science, 16*(1), 74-94.

Broom, E. (1991). Lifestyles of aspiring high performance athletes: A comparison of national models. *Journal of comparative physical education and sport, 8*(2), 24-54.

China teenage campus football work group office. (2018). *National Youth Campus Football Development Report* Beijing Sport University.

Churchill Jr, G. A. (1979). A paradigm for developing better measures of marketing constructs. *Journal of marketing research, 16*(1), 64-73.

Clumpner, R. A. (1994). 21st century success in international competition. *Sport in the global village*, 298-303.

Cohen, J. (1988). Set correlation and contingency tables. *Applied psychological measurement, 12*(4), 425-434.

De Bosscher, V., De Knop, P., & Heyndels, B. (2003). Comparing relative sporting success among countries: Create equal opportunities in sport. *Journal of comparative physical education and sport, 3*(3), 109-120.

De Bosscher, V., De Knop, P., Van Bottenburg, M., & Shibli, S. (2006). A conceptual framework for analysing sports policy factors leading to international sporting success. *European Sport Management Quarterly, 6*(2), 185-215.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of marketing research, 18*(1), 39-50.

Geisser, S. (1974). A predictive approach to the random effect model. *Biometrika, 61*(1), 101-107.

Hair, J., Henseler, J., Dijkstra, T. K., & Sarstedt, M. (2014). Common beliefs and reality about partial least squares: comments on Rönkkö and Evermann.

Hair Jr, J. F., Sarstedt, M., Hopkins, L., & Kuppelwieser, V. G. (2014). Partial least squares structural equation modeling (PLS-SEM). *European business review*.

Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The use of partial least squares path modeling in international marketing. In *New challenges to international marketing*: Emerald Group Publishing Limited.

Hu, L.-t., & Bentler, P. M. (1998). Fit indices in covariance structure modeling: Sensitivity to underparameterized model misspecification. *Psychological methods, 3*(4), 424.

Kaiser, H. F. (1974). An index of factorial simplicity. *Psychometrika, 39*(1).

Larose, K., & Haggerty, T. (1996). Factors associated with national Olympic success: An exploratory study (Unpublished Master's thesis). *University of New Brunswick, Canada*.

Myers, R. (1990). Detecting and combating multicollinearity. *Classical and modern regression with applications*, 368-423.

Nunnally, J. C., & Bernstein, I. (1994). Validity. *Psychometric theory, 3*, 99-132.

Pizam, A., Neumann, Y., & Reichel, A. (1978). Dimentions of tourist satisfaction with a destination area. *Annals of tourism Research, 5*(3), 314-322.

Seppänen, P. (1981). Olympic success: a cross-national perspective. *Olympic success: a cross-national perspective.*, 93-116.

Stone, M. (1974). Cross-validatory choice and assessment of statistical predictions. *Journal of the Royal Statistical Society: Series B (Methodological), 36*(2), 111-133.

Wong, K. K.-K. (2013). Partial least squares structural equation modeling (PLS-SEM) techniques using SmartPLS. *Marketing Bulletin, 24*(1), 1-32.

Yan, L., & Yongjin, J. (2007). Research on Sample Size of Customer Satisfaction Model. *Statistical Research*(07), 68-74.

Zhang, X. (2015). *Research on the Development of Shanghai Campus Football League.* (postgraduate). Shanghai Normal University, Available from Cnki