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The Effect of Soccer on College Success and How People Should Allocate Time for Participation

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Abstract: The development of young talent at an early age is crucial to the standing of soccer in any country. Structured support for emerging talent creates a basis for national pride and socioeconomic mobility, especially in countries where soccer is venerated almost obsessively. This study takes a sophisticated approach to analyzing the socioeconomic effects of early soccer training, revealing a crucial connection between a person's talent in soccer and the overall value gained from both direct and indirect advantages. The paper goes into further detail on how the earning potential produced by soccer extends to beneficial externalities like improved physical and mental well-being, which not only improves the quality of life but also increases the likelihood of getting accepted into prestigious educational institutions. The study identifies a possible talent threshold that may be used as a benchmark for assessing the financial viability of soccer training in relation to immediate costs. It also considers how decreasing this talent requirement can significantly increase student involvement in soccer. Consequently, this investigation aims to further the conversation on childhood soccer training by exposing its larger effects on both personal and global socioeconomic environments.

Keywords: soccer, soccer youth training, grassroot development, tradeoff

1. Introduction

Soccer has a profound influence on the cultures of the countries where it is respected. The foundation of its legacy is the development of young talent, which promotes socioeconomic mobility for aspiring soccer players as well as national pride. The debate, however, frequently gets stuck when discussing the short-term costs of intense training, overshadowing the long-term advantages and positive externalities of the activity [1]. This paper seeks to enlarge this narrative by delving into the complex socioeconomic effects of young soccer cultivation. It aims to show how a child's prowess in soccer relates to their overall utility. In addition to analyzing how lowering this requirement might greatly increase student interest in soccer, this research aims to present a prospective talent threshold as a benchmark to evaluate the profitability of soccer training engagement. By doing so, it may be able to change public opinion and policy regarding the development of soccer talent and the socioeconomic landscapes of both individuals and entire countries.

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2. Background Information

2.1. The History of Chinese Youth Soccer Training

The evolution of China's youth soccer training system and related policies is relatively recent when compared with more established football nations. However, in the past few decades, China has made significant strides in this area.

In the late 20th Century, China had limited policies or systems for youth soccer training. In the early 2000s, China began to recognize the need for structured youth soccer development. From 2010 to 2014, the Chinese government began to acknowledge the importance of youth development in soccer. More initiatives were put in place to promote soccer in schools.

From 2015 to present, China introduced a comprehensive plan for soccer development in 2015, called "The Overall Plan of Chinese Football Reform and Development" which aimed to overhaul the soccer system in China completely, with an emphasis on promoting the sport at the grassroots level.

2.2. China's Current Policies and Focuses

China has been significantly investing in soccer with a long-term plan to become a global soccer powerhouse. This plan places a huge emphasis on youth soccer. The philosophy behind Shanghai's youth soccer training system might revolve around the following principles:

(1) Grassroots Development: To promote the sport among children from a very young age, building interest and passion [2].

(2) Technical Proficiency and Tactical Understanding: Mastering technical skills like ball control, passing, dribbling, shooting, and defensive abilities; Improving the players' game understanding, decision-making, and tactical awareness [2].

(3) Physical Fitness: A high level of fitness is essential for the modern game. Regular fitness training, focusing on strength, stamina, and agility could be integral parts of the program [2].

(4) Holistic Development: Emphasizing on the holistic development of the youth, including their academic progress, interpersonal skills, teamwork, discipline, and mental toughness [2].

(5) Long-term Athlete Development (LTAD): The LTAD model involves progressive training and competition levels suitable for their developmental stage [2].

3. The Shanghai Youth Soccer Training Systems

3.1. Campus Soccer

Campus Soccer is a system in which different teams from different schools within a district of Shanghai compete with each other in leagues. An advantage of the system is that students can save countless amounts of time when they do not have to travel to other places for training. In contrast, some predominant shortcomings of this system include: not all, not even a majority of the schools choose to focus on soccer, which leads to teams with distinct levels of competitiveness competing with each other in the same league [3].

3.2. Professional Clubs' Youth Training

Every professional soccer club has its own system of youth training. They spot and recruit talented players at a young age and provide them with specialized training that is distinct in each club. This system can be guaranteed quality and time as they are provided by professional teams with high levels of competitiveness [4]; it also requires much more time and energy dedication as most players typically attend two training sessions every day [5].

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3.3. Social Youth Training

Social youth training includes private organizations that are separated from schools and professional clubs, and these organizations are usually open to everyone. However, soccer is a team sport, and the chemistry and tactics take years to develop. The form of social youth training promises that the flow of players into and out of the team will be much more frequent than the other forms of youth training [6].

4. Modeling

Countless people frequently miss the abundant long-term benefits that being involved in sports activities may produce in favor of the shortsighted short-term expenditures connected with participation, especially soccer. Initially, the financial costs of the necessary equipment, the enrollment fees, and the travel expenses to games or tournaments may seem prohibitive [7]. However, significant long-term physical and psychological externalities of playing soccer exist. Soccer encourages collaboration, discipline, and physical fitness, traits that carry over to a variety of other facets of life, such as academics and profession. The long-term commitment to improving social capital, public health, and national status through possible victory in international contests is what makes investing in youth soccer more than merely a resource allocation [8]. Therefore, a more balanced awareness of the short-term costs and long-term benefits is essential for people and nations that want to advance their soccer programs [9].

The goal of this mathematical model is to find the relationship between time allocated for soccer and studying based on one's talent in soccer and the potential utility after getting into college.

To determine if a child with talent in soccer a will be better off by going to college or playing soccer, a two-period model will be used. In the first period, the child will allocate time to studying or soccer training. Variables included in the first period are:

(1) The amount of time put into reading books, or studying in general, is h_b.

(2) The amount of time put into soccer practice is h_s.

In the second period, the child will make a choice between studying in college, playing soccer as a professional athlete, or neither. Variables included in the second period are:

(1) If going to college without playing soccer, earn w_H after graduation, if not going to college, earn w_L.

(2) If becoming a soccer player, earn B if successful, otherwise, earn w_L.

(3) Not considering externality, the probability of going to college is $\Pr(h_b) = {h_b}^{\theta}$.

(4) Considering externality, the probability of going to college is $\Pr(h_b, h_s) = \alpha {h_s}^{\theta}$.

By finding the maximum values of both equations using differentiation, a relationship between talent in soccer and the choice of career can then be found.

4.1. Part 1: Without Externality

The total utility of going to college and playing soccer without considering the externality that soccer has on children's long-term well-being, u_b and u_s, in terms of salary, is

$$u_b = E - \varphi_b h_b - \varphi_s h_s + \beta\left[{h_b}^{\theta} w_H + \left(1 - {h_b}^{\theta}\right) w_L\right], u_s = E - \varphi_b h_b - \varphi_s h_s + \beta\left[\alpha {h_s}^{\theta} B + \left(1 - a{h_s}^{\theta}\right) w_L\right] (1)$$

where ${h_b}^{\theta}$ and ${h_s}^{\theta}$ represents the probability of going to college and playing soccer to a successful extent, respectively.

By differentiation, u_b and u_s reaches maximum when

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$$h_b = [\frac{\beta}{\varphi_b}(w_H - w_L)\theta]^{\frac{1}{1-\theta}} \quad , \quad h_s = \left[\frac{\beta}{\varphi_s}(B - w_L)\theta a\right]^{\frac{1}{1-\theta}} \tag{2}$$

To ensure the existence of a maximum value of u_b and u_s, it is assumed that $0 < \theta < 1$.

$$u_b = E + \beta w_L + \varphi_b\left(\frac{1}{\theta} - 1\right)\left[\frac{\beta}{\varphi_b}(w_H - w_L)\theta\right]^{\frac{1}{1-\theta}} \quad , \quad u_s = E + \beta w_L + \varphi_s\left(\frac{1}{\theta} - 1\right)\left[\frac{\beta}{\varphi_s}(B - w_L)\theta\alpha\right]^{\frac{1}{1-\theta}} \tag{3}$$

Setting $u_b = u_s$, a value of α which results in the same total utility can be found. At this level of talent represented by this α, denoted as $\bar{a}$, the individual would be indifference about choosing soccer or study.

$$\alpha = \frac{w_H - w_L}{B - w_L}\left(\frac{\varphi_s}{\varphi_b}\right)^{\theta} = \bar{a} \tag{4}$$

When the actual talent α is greater than $\bar{a}$, $u_b < u_s$, it suggests that having a career in soccer will result in a greater total utility, or salary in this case.

4.2. Part 2: With Externality

Due to the externality of playing soccer, a student's physical and mental well-being is enhanced, which allows one to earn an advantage over peers during college application. Subsequently, the student is likely to proceed to a better college compared to if the student does not play any sport. The probability of going to college is now based on both h_b and h_s. Therefore,

$$\Pr(h_b, h_s) = \left({h_b}^{\rho}{h_s}^{1-\rho}\right)^{\theta} \tag{5}$$

Consequently, the total utility of going to college after considering the externality, ${u_b}'$, is given by:

$${u_b}^{e} = E - \varphi_b h_b - \varphi_s h_s + \beta\left\{\left({h_b}^{\rho}{h_s}^{1-\rho}\right)^{\theta} w_H + \left[1 - \left({h_b}^{\rho}{h_s}^{1-\rho}\right)^{\theta}\right] w_L\right\} \tag{6}$$

For convenience, the effects of studying on soccer skills are neglected in this model. Thus, by the same processes of differentiation as part 1, ${u_b}^{e}$ can be found:

$${u_b}^{e} = E + \beta w_L + \left(\frac{1}{\theta} - 1\right)\frac{\varphi_b}{\rho}\left[\beta(w_H - w_L)\theta\rho\left(\frac{\varphi_b(1-\rho)}{\varphi_s\rho}\right)^{(1-\rho)\theta}\right]^{\frac{1}{1-\theta}} \tag{7}$$

When setting ${u_b}^{e} = u_s$, a value of α which results in the same total utility can be found. At this level of talent represented by this α, denoted as $\bar{a}'$ for convenience, the individual would be indifference about choosing soccer or study, as they lead to the same outcome.

$$\alpha = \frac{w_H - w_L}{B - w_L}\left(\frac{\rho}{\varphi_b} \cdot \frac{\varphi_s}{1-\rho}\right)^{\rho\theta}(1-\rho)^{\theta} = \bar{a}' \tag{8}$$

Using equation (4) and equation (8), a relationship between $\bar{a}$ and $\bar{a}'$ can be found to determine the effect of externality on people's choices.

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$$\left(\frac{\varphi_s}{\varphi_b}\right)^{(1-\rho)}\left(\frac{\rho}{1-\rho}\right)^{\rho}(1-\rho)<1 \tag{9}$$

In the case described in equation (9), $\bar{a}$ is greater than $\bar{a}'$, which means that under the circumstance that people take the positive benefits of playing soccer into consideration, more people's talent level will reach the cutoff threshold $\bar{a}'$. Therefore, under rational decision-making, it is expected that the number of people playing soccer will increase.

As described in equation (9), the greater φ_b is compared to φ_s, the smaller $\left(\frac{\varphi_s}{\varphi_b}\right)^{(1-\rho)}\left(\frac{\rho}{1-\rho}\right)^{\rho}(1-\rho)$ will be from 1, meaning that $\bar{a}$ will be betting greater compared with $\bar{a}'$ as well. Therefore, ultimately a greater φ_b, the disutility of studying, will lead to more people choosing to play soccer. φ_b and φ_s are both determined by the potential displeasure involved in either studying or soccer. For studying, experiences such as coercion from parents towards good grades and intense peer pressure can increase φ_b; for playing soccer, the criticisms from coaches and teammates can increase φ_s, while if positive environments are established where there are more encouragement and support, φ_s is likely to decrease and eventually increasing the number of people participating in soccer.

Since w_H and B may vary across different countries or even different cities within a country, the change in these values will shift the cutoff talent levels $\bar{a}$ and $\bar{a}'$. An increase in w_H will lead to an increase in $\bar{a}$. An increase in B will lead to an increase in $\bar{a}$ and more people's talent level can reach this threshold.

Apart from the threshold levels discussed above, in the end, the deciding factor is a person's talent at soccer, which can be influenced by several components, including innate abilities, and environmental factors.

(1) Genetic factors: The physical aspects of a person's body such as speed, endurance, and balance may be in part due to heredity and can lead to a natural advantage at soccer.

(2) Early exposure: Researches show that people are more likely and more willing to accept new things at a younger age. Thus, exposing individuals to soccer when they are kids has a better effect on cultivating their interest in soccer [10].

(3) Training quality: A sustainable and well-designed training system and expert guidance can significantly enhance talent [10].

(4) Mental toughness: Some individuals are born to be a leader of the team because they are equipped with a strong mind, and the soccer field becomes the perfect platform for them to develop this talent [10].

(5) Socioeconomic factors: A player's talent might be affected if insufficient resources are provided. In turn, a gifted player's talent is likely to be further cultivated with abundant resources and support [10].

5. Conclusion

The main goal of this study was to outline the socioeconomic effects of early soccer cultivation while highlighting the significant correlation between a child's soccer prowess and the total utility gained from both the direct and indirect advantages. The study suggested a possible talent threshold that might be used as a benchmark for determining if soccer training is financially efficient given its short-term costs.

Beyond merely time allotted for training and talent, a wider range of factors determining the ultimate utility could be taken into account to further optimize this study. For example, the study might be strengthened by looking at the impact of governmental regulations and societal perceptions

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of soccer. Further, a more comprehensive picture may be presented by looking into the psychological effects of intensive training and how they affect young athletes' mental health and academic achievement.

Looking ahead, technological advancements such as the integration of data analytics and virtual reality in soccer training could revolutionize talent identification and the overall approach to training. This might then cause the conversation to turn to improving training methods, lowering injury rates, and possibly changing the suggested talent threshold, revealing a more complex relationships between soccer, cultural identity, and socioeconomic mobility, resulting in a more informed discussion about how to formulate policies for budget and regulation on youth soccer training.

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References

[1] *Qurban, H., Wang, J., Siddique, H., Morris, T., & Qiao, Z. (2019). The mediating role of parental support: The relation between sports participation, self-esteem, and motivation for sports among chinese students. Current Psychology, 38(2), 308-319.*

[2] *The Chinese General Administration of Sport. (2023) Implementation Plan for Chinese Youth Campus Football Activities by the Ministry of Education [EB/OL]. https://www.sport.gov.cn/*

[3] *Jun Wang, Tao Liu. (2021) A Study on Effective Strategies for Promoting Campus Football: Taking Wuhan, a Pilot City for Football Reform, as an Example. International Education, 3(1): 27-31. DOI: 10.12208/j.ije.20210004*

[4] *Qian, Tyreal Yizhou & Wang, Jerred & Chou, Wen-Hao Winston & Kim, Euisoo & Zhang, James & Gong, Bo. (2017). When the future of Chinese soccer is at stake: Chinese youth's attention, involvement and satisfaction. International Journal of Sports Marketing and Sponsorship. 18. 29-47. 10.1108/IJSMS-09-2016-0065.*

[5] *Yansong Wang, Quan Liu. (2017) A Study on the Joint Action of Campus Football Promotion Plan and Football Development Pilot City Project: Taking Wuhan Urban Youth Training Center as an Example [J]. Hubei Sports Technology, 36(06): 471-474.*

[6] *Do_it_yourself. (2017) Football, The Advantages and Disadvantages of British Youth Training, Liverpool and Schalke 04 Youth Training System. Personal Library.*

[7] *Weipi Dai. (2022) Problems with Chinese Soccer Development and Corresponding Solutions, Journal of Education, Humanities and Social Sciences, MAMEE 2022.*

[8] *Luneng Youth Training. (2018) What is the difference between China's football youth training system and the youth training system of the five major European leagues? Zhihu, https://www.zhihu.com/question/48449131/answer/369933438*

[9] *XiaoJin sports field vision. (2022) The reason for the loss of National football team exposed! The number of youth training in Vietnam is more than 100 times that of the national Football team. http://news.sohu.com/a/704542328_121267611.*

[10] *Malina, R. M., Ribeiro, B., Aroso, J., & Cumming, S. P. (2007). Characteristics of youth soccer players aged 13–15 years classified by skill level. British journal of sports medicine,41(5), 290-295.*