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**ROLE OF SOCIAL CAPITAL IN THE PERFORMANCE OF NATIONAL TEAMS  
(THE CASE OF SOCCER)**

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## **The research goal**

The overarching goal of this thesis is to demonstrate theoretically and to estimate empirically the role of social capital in the national soccer teams' performance.

## **Motivation**

The goal of the thesis is achieved at the intersection of two actively developing research areas of applied economics – sports economics, and economic studies of social capital (understood as the ability of groups and communities to act collectively for a common goal).

An introduction of cultural factors in the number of key prerequisites for sustainable development and socio-economic efficiency has led to a radical rethinking of the notion of "wealth of nations" and was comparable to the awareness of the role of institutions in economy and society. Over the past decades, the academic literature has presented convincing evidence of the importance of social capital for economic growth, social welfare, trade and investment, the effectiveness of economic and political institutions, education, health, urban development and other spheres of human activity, however the professional sport is still absent in this list. Thus, the expansion of such an analysis to sports is highly relevant.

Sport is considered by international organizations as an effective tool of economic development (Beutler, 2008) and at the same time contributes to the accumulation of human capital, social mobility and poverty reduction (Beutler, 2008; Seippel, 2006). In the sports economics much attention is paid to the motivation of athletes and the success factors of national teams in the international arena – such factors include economic conditions, history and geography, and other variables, among which, however, social capital has not yet figured prominently. Meanwhile, there is a clear reason to expect that, by virtue of its definition as a resource of collective action, social capital should be an essential factor of success in team sports. The thesis examines the role of social capital in success of national soccer teams, thereby filling the existing gap in the literature on incentives and mechanism of the formation of success in soccer teams.

## **Methodology**

To achieve the goal of the research, the thesis specifies the channels and mechanisms for the possible impact of social capital as a factor of soccer teams' success, including the interaction of social capital with other factors. A custom-tailored theoretical model developed

in the dissertation is used to formulate the main hypotheses of the research which are subsequently submitted to empirical verification using various data sources.

Social capital matters for the performance of football teams is comprised, firstly, by affecting players' incentives to exert efforts for the sake of team success in a situation where individual efforts do not receive significant material rewards. Secondly, social capital provides the members of national team with skills and ability to coordinate efforts in an ad hoc team formed to solve a short-term task, without accumulated experience of joint activity which is available in football clubs.

A theoretical model that incorporates these channels of influence yields the conclusions that, firstly, social capital in a team contributes to its success, and, what is especially important, it increases the return to talent of soccer players and creates the prerequisites for effective realization of individual abilities of team members.

Empirical verification of the above conjectures generated by the theoretical model requires measures of team performance, as well as the talent of its participants and social capital in the team. The first two measures are derived from football statistics, while for the third one cross-country survey data are used. This approach to measuring social capital in national teams is justified, among other things, by a special test making use of the results of the Football World Cup held in Russia in 2018.

Empirical analyses presented in the thesis show that the complex multi-dimensional analysis of soccer teams' success can be reduced to two key variables – the strength of players and their willingness and ability to jointly exert efforts for the sake of common success, while the previous literature considered numerous economic, geographical, political and other factors. Estimations of the contribution of these two variables to the results of national soccer teams produces results which are fully consistent with the conclusions of theory developed in this thesis.

### **Brief literature review**

The problem of collective action is in the focus of attention of economists since the publication of the book with the same title by M. Olson (Olson, 1965). A wide body of research focuses on possible market failures due to the gap between individual rationality and collective benefits. Description of equilibria in the problem of collective action and assessment of efficiency losses due to insufficient incentives and lack of coordination between participants have become classical parts of the microeconomic theory (see, for example, Bergstrom, Blum,

Varian, 1986). Analysis of this problem has been extended to situations in which the overall result can be divided between participants for private consumption, as well as to the issue of sharing mechanisms that could bring players closer to the public optimum (Holmstrom, 1982). Particular attention is paid to the case of non-observable efforts in the context of principal-agent relations, when the team works in the interests of a third party, and to moral hazard in teams (ibid). The incentives of participants motivated by career concerns and interested in creating favorable expectations regarding their human capital endowments are studied (Auriol, Friebe, Pechlivanos, 2002; Meagher, Prasad, 2016).

Individual behavior in situations of collective action observed in practice and in the laboratory often demonstrates a greater level of individual efforts and cooperation than predicted by theories in which the behavior of participants is motivated solely by private gain. In this connection, theories that allow for pro-social motivation of the participants have been developed, based on assumptions of collectivism and cohesion between teammates, who feel and value their belonging to the collective and society as a whole and are driven by altruism (Andreoni, 2006; Benabou, Tirole, 2006). These research areas are being part of the economic theory of social capital, formalizing normative and behavioral prerequisites for cooperation in a team and the society, as well as the expectations and conventions arising in such cases.

The extensive and growing empirical literature based on this theory provides numerous evidences of tangible returns to social capital at micro, meso and macro levels, as well as in various areas of the economy, public administration and the social sphere (see, for example, Guiso et al., 2006; Gorodnichenko, Roland, 2011; Putnam, 1993; Greif, 2006; Greif and Tabellini, 2010, etc.). At the same time, the role of social capital in small groups, where it directly contributes to solving the problem of collective action, receives less attention in the literature. In particular, the existing papers of other authors hardly consider the role of social capital in team sports.

Conversely, numerous empirical studies of success factors in team sports (Leeds, Leeds, 2009, Berlinschi et al., 2013), as already noted, do not explicitly consider social capital among such factors. In such research, sports teams are often considered as "black boxes", transforming various resources into the results of games, points in tournaments, rankings, etc. Attempts to "look inside" such "black boxes" and explicitly investigate the motivation of players and their interaction with each other are scarce – see, for example, (Hoffman et al., 2002; Macmillan, Smith, 2007; Houston, Wilson, 2002).

It can be concluded that while there is indirect evidence in the existing literature of the importance of social capital for success in team sports, including soccer, this issue has not yet been tackled and explored explicitly and directly.

### **Object and subject of the research**

The *object* of the dissertation research is the performance of national soccer teams. There are several important reasons for this research object to be chosen.

Firstly, soccer belongs to the so-called interactive sports, when players actively interact with each other during the match, and the success of the team largely depends on the quality of such interaction, which in turn is related to the stock of social capital in the team. This channel of possible impact of social capital on the results is absent in co-active sports (for example, bowling), where team members act more or less independently of each other, and a team result is made up of individual achievements.

Secondly, according to the available data, results of national teams, unlike clubs, have a relatively weak effect on the players' income and their "capitalization" in the professional market, and thus in teams there are practically no direct financial incentives for players to make efforts for the team's win. This indicates the importance of non-financial motivation associated with pro-social norms, collectivist values, a sense of belonging to the society and responsibility for broader social welfare. For the two mentioned reasons, in the case of national teams, both channels of influence of social capital, as described above, are involved in the results, when social capital facilitates the coordination of the players' efforts, and also increases efforts for a common success. Simultaneous presence of these two channels increases the odds of detecting the expected impact of social capital on team results.

Thirdly, due to the popularity and importance of football, there is detailed and diverse soccer statistics, available for empirical analysis and testing hypotheses of research. It is important that, due to the record popularity of soccer globally, such statistics covers many countries all over the world with different cultural characteristics and other factors necessary for our analysis; such variability is a potential asset for the construction of empirical models. The analysis is also facilitated by the universality of the rules of game and the organization of tournaments, as well as the possibility of an objective measurement of the achievements of soccer teams.

Fourth, numerous publications on the economics of soccer and the success factors of soccer teams serve as a baseline and allow to assess more accurately the contribution of the

thesis to the research area of sports economics. Finally, the choice of the object of research is motivated by the importance of football in the modern world.

The *subject* of this thesis is the role of social capital in the solution of the collective action problem. A theoretical model of such social capital's role is constructed, and on the basis of this model the hypotheses of research are formed and subjected to empirical verification.

### **Research objectives**

In order to achieve the goal of the research stated above – to demonstrate theoretically and to estimate empirically the role of social capital in the national soccer teams' performance – the following objectives are set and achieved in the dissertation:

1. To review and analyze the current state of research in the economics of sports, with particular emphasis on the prerequisites of success of national soccer teams, as well as the state-of-the-art economic studies of the collective action problem and of the role of social capital in its solution.
2. To formulate, based on such analysis, approaches and strategies of a theoretical and empirical study of the contribution of social capital to the success of national soccer teams.
3. To construct a theoretical model of social capital in collective action, adequate to the object of research, and to form on the basis of ,analysis of the proposed model, research hypotheses about the role of social capital in the performance of national soccer teams.
4. To propose and justify a methodology for estimation of social capital in national teams, as well as for measuring other variables and factors, to identify necessary sources of information, and on thus create a database for empirical analysis.
5. To construct and estimate econometric models for testing the research hypotheses.
6. To verify robustness of the obtained empirical findings to sample composition, estimation methods and measurement procedures for the main variables.

### **Main hypotheses**

Two main hypotheses are stated and tested in the dissertation.

Hypothesis 1. Social capital is a significant factor of national soccer team success.

Hypothesis 2. Social capital and individual talent of team players mutually complement each other as factors of national soccer team success, so that one of them increases the return to the other.

### **Methodological and theoretical research basis**

Theory of collective action and its development in modern academic literature serves as the theoretical basis for this research. Approaches to modeling non-observable contribution and non-excludable output of collective action are based on classical papers, such as (Holmstrom 1982, Bergstrom, Blum, Varian, 1986). Implicit incentives theory (Holmstrom, 1999; Dewatripont, Jewitt, Tirole, 1999) is used to describe the incentives and efforts of national soccer team players. Players' altruistic motivation is introduced into a model in accordance to the theory of pro-social behavior (Andreoni, 2006; Benabou, Tirole, 2006, Bartling, Siemens, 2010; Calabuig et al., 2016).

Various econometric analysis techniques serve as the methodological basis of the empirical section of the thesis. Those include the ordinary least squares method, Poisson and negative binomial regressions, results of the Sobel test for mediation effect (Baron, Kenny, 1986).

### **Data sources**

Information source of the study comprise three independently derived datasets based on three cross-country surveys: World Values Survey (WVS), European Social Survey (ESS) and Hofstede's cultural dimensions analysis. These databases are used to calculate social capital indices of national soccer teams. The justification of such approach to measuring social capital of national soccer teams is provided in the thesis. It is important that social capital of national teams' measures are derived from several independent sources. Obtaining qualitatively identical conclusions using different data sources increases the reliability of the empirical results of this thesis.

To calculate success measures for national teams, cardinal and ordinal estimates of the results of national football teams provided by the International Federation of Football Associations (FIFA) are used. Individual strength of the players is measured by an estimate of their transfer value ([www.transfermarkt.de](http://www.transfermarkt.de)).

## **Main findings and contributions**

Main findings and results of the thesis are as follows.

1. A theoretical model of social capital in the team, reflecting the peculiarities of national football teams, was developed and investigated.
2. Based on the analysis of the model, it was shown that social capital and cumulative talent of players are two mutually complementary factors of the team's success.
3. An approach to estimation of social capital of national football teams based on cross-country survey data is developed and justified.
4. An aggregate talent of the team players' index is calculated; it is shown that the influence of a number of factors on team success, revealed in the previous literature, is mediated by such aggregate talent index.
5. Based on several econometric models, it is shown that social capital is a significant success factor for national soccer teams; mutual complementarity of social capital and strength of players as team success factors has been demonstrated. or the team are demonstrated. This means that social capital increases payoffs to players' talents in top-performing teams.
6. Robustness of main empirical findings has been demonstrated.

## **Originality of the thesis**

Research questions and main findings of this thesis are novel:

- the problem of analysis and estimation of the role of social capital in national soccer teams was stated and solved for the first time in academic literature;
- an original model of social capital in a football team, synthesizing the previously proposed in the literature approaches to the analysis of pro-social incentives and career concerns, and explaining the joint influence of the social capital and talent of the team on its results, has been developed;
- an empirical information base for analysis of the role of social capital in national football teams has been compiled and put in use;
- for the first time in academic literature, an aggregate talent index for national soccer teams is calculated according to the original methodology; it is shown that this index integrates and mediates the impact of a number of team success factors considered in the previous literature;



- quantitative estimations of the return to social capital in national soccer teams are obtained for the first time in academic literature;
- evidence of the mutual complementarity of players' strength and social capital as the resources of football teams has been found for the first time in the literature.

### **Theoretical significance of the research results**

The thesis provides new knowledge about mechanisms and channels of the influence of social capital on the efficiency of collective actions in team, as well as about the link between individual abilities of participants and their collective ability to work together towards a common goal. New knowledge about success factors of football teams has also been obtained, synthesizing two streams of research - economics of sports and economics of social capital, and filling lacunae in each of these directions.

### **Applied significance of the research results**

Inclusion of social capital and players' talent into the set of success factors of national teams increases the explanatory and predictive power of empirical models of national teams' success. It is shown that the contribution of social capital increases in the strength of team's players, which emphasizes the role of cultural factors in the success of the strongest national teams.

### **Reliability and validation of results**

The main findings of the dissertation are based on the state-of-the-art economic and mathematical models. Methods of theoretical and econometric analysis used in the thesis meet modern academic standards. Predictions of the formal theory have been verified empirically. Quantitative estimates of social capital's contribution to the performance of national football teams are reliable due to their robustness to alternative specifications of econometric models and to the choice of various sources of statistical information.

The results of the dissertation research were tested by the means of discussions at a number of international academic conferences and research seminars:

- XVII April International Academic Conference on Economic and Social Development, Moscow (Russian Federation), April 19-22, 2016;
- Research Seminar on the Economics of Sport, organized with the assistance of the French Ministry of Sport, Paris (France), May 22, 2016;

- The 8th European Conference on Sport Economics (ESEA), Groningen, (Kingdom of the Netherlands), August 31-September 2, 2016;
- Research seminar of the HSE "Political Economy", Moscow (Russian Federation), February 7, 2016;
- International Academic Conference on the Economics of Football, Kazan (Russian Federation), June 23-24, 2017;
- Research Seminar of the Higher School of Economics on Sport Studies, Moscow (Russian Federation), November 16, 2017.

### **Author's original articles**

The main results of this thesis paper are published in three articles in academic journals certified by the VAK of the Ministry of Education and Science of the Russian Federation, a total of over 50 pages.

- Zaytseva I. A. (2018). Social Capital as a Factor of Sports Achievements: The Case of National Football Teams // *Journal of the New Economic Association*, 1 (37), p. 25–47.
- Zaytseva I. A. (2015). The role of social capital in national football team performance // *Gorizonty Ekonomiki*. Vol. 24. № 5. p. 123-130.
- Zaytseva I. A. (2015). Economist's view on sport: current state of the field // *Voprosy Ekonomiki*. № 11. p. 100-119.