ANALYZING ROMANIAN SPORTS ORGANIZATIONS MANAGEMENT USING ECONOMETRIC FRONTIER

Alin Molcuț

ABSTRACT: Sport is an institution interesting to study, being similar, but also different from traditional business organizations. Significant segments of sport have copied practices and the values of the business world, and as a result have been designed strategic plans, and players and administrators have become paid employees.

The purposes of this paper are to highlight main models used in sports performance management as well as to test the relation between football organizations and economic growth for Romania for period 1992-2011. The results from the study performed suggest there is a non-linear relation between football organizations and economic growth that record a quadratic U-shape and a minimum level of GDPPC around 2457.5 RON.

Keywords: sports performance, input-output, Balanced Score Card, football organizations, economic growth

JEL Codes: M 12, L 83

Introduction

From the point of view managerial one, sport is an institution interesting to study, being similar, but also different from traditional business organizations (Smith and Stewart, 1999). Similarities occurred from progress or steadily in the past 30 years, becoming structured and managed in a manner more and more professional. Significant segments of sport have copied practices and the values of the business world, and as a result have been designed strategic plans, and players and administrators have become paid employees. In addition, games and activities are becoming branded products, fans become customers to be satisfied with and monitor and make alliances with partners-corporate enterprises (Slack, 1997).

At the same time, sports differ from the business (Smith and Stewart, 1999). Firstly, sport has a symbolic significance and emotional intensity rarely encountered in an insurance company, bank or house bets. Business organizations aimed at attachment submission and employees, care essential aimed at efficiency, productivity, and responses to changing market conditions. Sporting events, on the other hand, is characterized by strong emotional attachments, related to the past through nostalgia and tradition. Romantic visions, emotions and passions may not exceed commercial logic and achieving economic (Smith and Stewart, 1999).

Secondly, predictability and certainty, the objectives pursued in the world trade, especially in connection with product quality, are not always esteemed in the world sport. Fans are attracted to final games with uncertain and chaos poised around the corner (Sandy et al., 2004). Thirdly, sports do not operate on the basis of the need to optimize profits, also large commercial business. In practice, sports organizations may choose between two types of antagonistic organizational behavior, when you decide to the mission and objectives. The first is the model that maximizes your profits, who sees the club that a firm in a competitive market, while the profit is the only motivational force. The second model is the one for maximizing the usefulness, which emphasizes enmity between the clubs and desire to win as many matches against (Downward and Dawson, 2004).
Utility perspective in sports means that businesses are by their nature competitive and the only performance indicator is competitive success.

In many ways sport is always subject to an intense assessment. For instance, in the elite competitive sport, players and teams are noted and ranked in continuous mode. What's more, each has an opinion about the performance of his different sports leagues, this ranging from the report victories-defeats at the manner in which the game strategies have an impact on goals scored or the movements of the players. At the same time, many sports clubs do not allocate time necessary to achieve a comprehensive analysis of the performance outside the field. And, even if this happens, the analysis is restricted to a few issues, such as the distribution of the profit or the number of members.

A systematic approach to performance management is a useful tool for identifying strengths and weaknesses, but also the ways to improve overall organizational performance. Also, this approach is important in the case of decisions on the allocation of resources, with a view to obtaining the best possible outcome. It also can show how an organization, club or league layer relates to other organizations, clubs or leagues. In short, the use of a model for management of performance is essential for long-term success of the organization.

The paper is organized as follows. After a brief introduction, second section comprises main theoretical models developed for sports performance management. Section three outlines an overview of Romanian football organizations with an econometric model used to test the relation between football organizations and economic growth. The results are reported in section three, while section four concludes.

### Sports performance management models

A system of management of performance should be linked to the vision, aims and objectives organization (Robbins and Barnwell, 2002). These objectives can be used to identify areas that can improve organization performance. At this point in time, the purposes of the organization's basic sports differ significantly from those of the business organizations. Thus, some sports organizations (in particular professional sports teams in the United States) aim to maximize profits, while others are anxious to gain as many matches and meet the needs of members. Table no. 1 offers a selection of financial indicators which can be used for assessing financial performance sports organizations.

<table>
<thead>
<tr>
<th>Indicator Name</th>
<th>Definition</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating profit</td>
<td>Operating income minus operating expenses</td>
<td>Indicator of sustainability in the long term</td>
</tr>
<tr>
<td>Rate of profit</td>
<td>Weight of profit income</td>
<td>Indicator of capacity to cover total expenditure</td>
</tr>
<tr>
<td>Wages - turnover</td>
<td>Wages and salaries that share of turnover or income</td>
<td>Management indicator wages or salaries or associated costs</td>
</tr>
<tr>
<td>Working Capital</td>
<td>The difference between current assets and current liabilities</td>
<td>Indicator of its ability to cover the debts in the short term</td>
</tr>
<tr>
<td>Debt/equity capital</td>
<td>Short-term debt that share of the capital stock</td>
<td>Indicator of dependence on debt to finance operations/activities</td>
</tr>
<tr>
<td>Net Assets</td>
<td>The difference between total assets and liabilities total</td>
<td>Indicator of real wealth of the Organization</td>
</tr>
</tbody>
</table>

Source: Hoye et al., 2006, p. 185.
In conclusion, any management system performance must take into account, as well as reflecting main purpose of the club, the team, the event, or the league.

**A model in the view of the parties involved (stakeholders)**

Performance management should also deal with key stakeholder of the organization (Atkinson et al., 1997). If they are satisfied with the organization's performance, when they indeed this works best. A business sports listed on the stock exchange, a high profit and dividend policy will be suitable for both management and stakeholders. In a sports club based on member’s success is linked to more than performance on the field and the quality of services. On the other hand, for the bodies governing sporting events, they have a zero priority players' interests. In other words, the different types of sports organizations will have its own unique purposes and priorities, which will reflect how they rank equally the stakeholders (Friedman et al., 2004).

Stakeholders may have adverse interests. Sponsors may wish maximum media exposure and access to players, but it is in their interest clubs input to enhance the performance of the players, which means their involvement in the activities of sponsors. Sports organizations must therefore balance often conflicting needs and conflicting interests of the various stakeholders (Chappelet and Bayle, 2005). Main stakeholders of a sports organization and their expectations are summarized in table no. 2. Conclusion is that an organization will have several stakeholders, so that it will have to integrate their interests in the evaluation process.

**Table no. 2**

<table>
<thead>
<tr>
<th>Type of stakeholder</th>
<th>Expectations from the organization sports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Players</td>
<td>• On-the-spot Success</td>
</tr>
<tr>
<td></td>
<td>• Appropriate benefits and wages</td>
</tr>
<tr>
<td></td>
<td>• Few personal injury</td>
</tr>
<tr>
<td>Employees</td>
<td>• Appropriate benefits and wages</td>
</tr>
<tr>
<td></td>
<td>• Workplace Safety</td>
</tr>
<tr>
<td></td>
<td>• Career Development</td>
</tr>
<tr>
<td>Equipment Suppliers</td>
<td>• Controls Safety</td>
</tr>
<tr>
<td></td>
<td>• Brand awareness</td>
</tr>
<tr>
<td></td>
<td>• Players' approval</td>
</tr>
<tr>
<td>Members</td>
<td>• Services and benefits</td>
</tr>
<tr>
<td></td>
<td>• General Satisfaction</td>
</tr>
<tr>
<td>Owner/shareholders</td>
<td>• Rewarding investments</td>
</tr>
<tr>
<td></td>
<td>• Public acknowledgment of club/association</td>
</tr>
<tr>
<td>Sponsors</td>
<td>• The club's positive reputation</td>
</tr>
<tr>
<td></td>
<td>• Furthering awareness and brand awareness</td>
</tr>
<tr>
<td>Players' agents</td>
<td>• High moral standing of the players</td>
</tr>
<tr>
<td></td>
<td>• Payments to market average</td>
</tr>
<tr>
<td>Fans</td>
<td>• Quality of the game and excitement</td>
</tr>
<tr>
<td></td>
<td>• Statistical victories-positive tide</td>
</tr>
<tr>
<td>Community/society</td>
<td>• Civic Pride</td>
</tr>
<tr>
<td></td>
<td>• Provision of models for young people</td>
</tr>
<tr>
<td>Media</td>
<td>• High level of public interest</td>
</tr>
<tr>
<td></td>
<td>• Earths market</td>
</tr>
</tbody>
</table>

Source: Hoye et al., 2006, p. 186.
An approach to "input-output"

When it is developed a model for the evaluation of the performance of a sports organizations, it should be used a number of principles. A second approach affects inputs and outputs. This involves following up on things as well as quality, quantity, efficiency, cost-benefit ratio and employee productivity (Bouckaert, 1995). A summary of how the analysis of the "input-output" can be applied sports organizations is illustrated in table no. 3.

Table no. 3

<table>
<thead>
<tr>
<th>Size</th>
<th>So far as</th>
</tr>
</thead>
</table>
| Output: quantity | • Reward  
• Attendance at  
• Sign up as a member  
• Participation |
| Output: quality | • The standard clearance  
• Stadium Features  
• Service Standards  
• Overall experience with customers |
| Output: cost-benefit ratio | • Operating profit  
• Operations Costs  
• Net economic benefit  
• Social benefit |
| Entry: efficiency | • The cost of providing services  
• Administrative costs  
• Waiting Time |
| Entry: staff performance | • The level of satisfaction of the customers/members /fans  
• Staff experience and skills  
• Staff achievements |


A balanced approach and multi-dimensional model

A third approach designed to prevent emphasis obsessively put on financial indicators to the satisfaction of shareholders, by balancing benefits accumulated by customers, suppliers and employees (Harvard Business Review, 1998). This approach is explained in the model "Balanced scorecard" (BSC) developed by Kaplan and Norton (Kaplan and Norton, 1992, 1996).

Balanced scorecard (BSC) is a concept that allows balanced objectivization at strategic level an entire organization or of a unit component. Initiated by almost 20 years ago by Robert Kaplan and David Norton (and further developed by their teams their palladium Group), and balanced scorecard is adopted by thousands of companies all over the world who use it successfully to accelerate operational optimization of their work, reaching the what Kaplan and Norton called: "benefit execution" ( "The Execution Premium" ). The most which extend between implementations BSC add year-over-year in the Hall of Fame", together with those carried out to Hilton, Infosys, Ingersoll row, Kraft food, Merck, attend Martin, Marriott Hotel, Motorola, Ricoh, Saatchi & Saatchi, Siemens, Cisco, Skandia, StatOil, UPS, US Department of Commerce, US troops, the FBI, Royal Air Force and many others (Wikipedia)
The BSC model has four dimensions which will be highlighted below. A first aspect revealed by Kaplan and Norton is the fact that a good tool to measure the performance should not be a "control system" obsessed with the observance of a predetermined plan of individuals and organizational units. On the contrary, it must be a system of learning, concerned about the communication and information. Up to this point, Kaplan and Norton have tried to design a system for measuring performance indicators to balance external and easily quantifiable factors (such as the market share and profit rate) with domestic factors that administrative processes and development of staff. His first dimension of Kaplan and Norton is "financial perspective". Although they claim they were given too much importance financial results, they remain a point of departure for fundamental economic sustainability assessment of an organization. These indicators are represented by total sales, operational revenues and cash-flow-net, the ratio debt-capital and profit. This size answer the question: "How does he look at the shareholders?"

Second dimension is represented by "The Perspective customers". In this case, the emphasis is on identification of the customer and market shares on which the company will compete, as well as on developing indicators to reflect how well the company competes on segments identified. These indicators will comprise total sales on each segment, market share, attract customers, keeping customers and their satisfaction. Kaplan and Norton suggest that, for this size of performance, attention should be given to certain factors such as delivery on time, factors underlying the basis of the level of satisfaction of the customers. This size answer the question: "How do they see us customers?"

The third dimension is "the Perspective internal business process". This perspective requires management to identify critical internal processes in which the organization must excel, in order to ensure a competitive advantage. Kaplan and Norton shows that it's not just a matter of ensuring that processes that add value are effective, but also to improve and redesign processes and existing products. This dimension is launching the question: "In what respect should we do not excel in?"

The fourth dimension is "the perspective of learning and growth". The two authors consider this dimension as essential for long-term success of the organization. In a turbulent business environment, there is a likelihood of more than the technology and processes required to support competitive advantage to exceed technical and managerial skills of the staff to be responsible for these aspects. To eliminate this potential distance, organizations will need to invest in retraining employees, in developing systems and technologies of information and in alignment with organizational procedures and schemes. This dimension addressed to the question: "Can we innovating and creating value still?"

Finally, Kaplan and Norton suggest that each of the above prospects must be linked to a general objective which ensures that there is consistency and conduct mutually enhanced. In other words, the BSC is more than just an "Instrument panel" with indicators critics and factors key success. To be effective, it should reflect organization's mission and objectives.

Costs and benefits of a system to measure the performance
Planning and implementing a system of performance management can be expensive, it's also numerous analyzes of processes and activities of the organization, analyzes which consume much time. You can also turn into a bureaucratic nightmare, as it may generate hundreds of documents relating to microscopic scroll mode of the activities and to measure them. It should be recalled that the idea of performance management has resulted from studies of Frederick Winslow Taylor, in the first part of the 20th century XX. According to Taylor, the key to increase productivity was systematic analysis of the work practices, in order to identify the most efficient process, which then could become a model of good practice (Stewart, 1989).

The Taylorism has been the basis for the development of management by objectives and of total Quality Management, which were subsequently refined in a pattern wider performance management (Bouckaert and van Doren, 2003). As a result, a system of management of
performance structured in rigid mode can suppressed creativity and initiative, through the establishment of narrow labor standards defined and strict standards of behavior at the place of work.

At the same time, a system of management of performance well thought may generate a series of benefits in the long term (Williams, 1998). Firstly, it ensures that the activities of the organization are directly linked to the purposes and its major objectives. Secondly, it can motivate employees by the establishment of targets, that once touched generates rewards. Thirdly, such a system provides clarity, not only by identifying what must be done, but also by indicating persons responsible for this. Fourthly, it completes cycle of management, by monitoring processes, and measurement of results. Fifthly, it forces managers to develop indicators for the outcome quantifiable factors key to eliminate ambiguous aims objectives and unclear.

Designing a model of appropriate performance management sport

The BSC model has several strengths, but requires significant adjustments to meet the needs sports organizations. An approach is to maintain the four dimensions and their use to project a particular model of performance management, which reflects specific features of sports organizations. In this respect, has been designed following model management of performance in the "9 points" (Hoye et al., 2006).

The first dimension of performance focuses on victories, awards and successes. This dimension recognizes that most sports clubs and associations will be seen as well producing teams and players winners. In other words, placed in front of the choice of between championship winning and increase profits, most clubs will prefer medal winner.

However, as with all organizations, clubs, associations and sports contract need funds to ensure the long-term viability, in order to pay their debts and to cover operational costs year-over-year. Thus, second dimension is concerned about financial sustainability. In this respect, the indicators relating to an increase in income will not be enough of them, being required indicators related to profit, liquidity, long-term debts, the return on investment and increase in net assets.

Distribution market is the third dimension. This refers to the degree to which a sports league, a club or an association sports is able to facilitate its consumption practice sports. Provided that the primary objective is linked to the participation in sport, then it must be concerned about the number sport bases, their location and quality of experience on offer. If the lens affects the audience, then you will need to be considered in view of the number of seats in the stadium, exposure to the radio and TV broadcasts coverage.

The fourth dimension is the size of the market and the market share. The fifth dimension is customer satisfaction, expressing how powerful approve viewers, fans and the members performance league, club or association. As a general rule, sports organizations generates connections extremely chocolate sauce with customers, fans and the members, but there are situations where they may rarely attends matches and involves less. Investigating participants, members and fans can reveal early signs of their discontent or, on the contrary, may indicate factors that claim the relationship.

The sixth dimension is represented by the procedures and internal processes. For sports organizations, this begins with the mode of recruitment of players and general quality. Recruitment and retention of members is another important issue, as it is about their ability to contribute with time, expertise, and money. Players' capacity to improve skills is a function of the system support, here entering and skills personnel involved in drive. This leads to organization's ability to ensure a safe environment, in which risk management is taken seriously, and incidence of disputes is reduced. Many of the above factors are difficult to quantify, but requires special attention.

Product improvement is the seventh dimension. In this regard, sports do not differ more than the business itself, in the sense that it operates on a highly competitive market, and ongoing innovation and improving the products are essential in order to attract new customers and keep old
ones. Some sports have been extremely successful to change the game to satisfy needs of special groups, while others may not have not have parted with traditional practices. In the case of spectator sports took place few improvements on stadiums, while in other cases there has been a real revolution with regard to the form and the comfort stadiums galleries. Changes in the design sports equipment have also improved quality of the product (for example, in tennis - the use of fiber in missiles from carbon).

The eighth dimension is the development and the learning process relating to staff. Sport is an activity centered on person, time-consuming, requiring staff with social skills refined and ability to create an organizational culture, to keep players and members. Innovation sports specific technical skills are inadequate administrative and traditional drive. Thus, it becomes necessary to retraining and education staff, in order to ensure consistency between staff skills and new technologies and infrastructures underlying contemporary sports.

Last and the new dimension refer to economic, social and environmental impacts on which it has a sports league, a club or a sport association upon the Community. From this point of view, support from the part of the government will depend on the positive side of this impact (Norman and MacDonald, 2004). Sports organizations have responsibility for setting up organizational cultures who cherishes things like: diversity, equal opportunities and non-discriminatory treatment of gays, homosexuals and religious minorities (Atkinson et al., 1997; Robbins and Barnwell, 2002; Williams, 1998).

An overview of Romanian football organizations activity

Institutional setting

In Romania there are four types of sports organizations: public sports club, private sports club, county sports association and sports association without legal personality. In terms of sport practiced are predominating football organizations. For this reason, I have collect data from National Institute of Statistics for period 1992-2011 to highlight the evolution of football organizations and registered players registered at Romanian Soccer Federation (figure no. 1).

![Figure no. 1 - The evolution of football organizations and registered players 1992-2011](source: author calculation, data collected from www.insse.ro)
The results for the period tested suggest there is no high volatility in both football organizations and registered players. For football organizations, standard deviation is equal to 466 (lower than mean 2621), while for registered players standard deviation is equal to 17528 (lower than mean 103400). However, in terms of registered players, one can observe a first peak in 1995 followed by a major decrease and then an increasing evolution with a new peak in 2007. This random walking evolution highlights the weakness of sport activities in Romania.

**Parametric approach**

There are two contemporary approaches to the measurement of efficiency, i.e. the parametric approach (econometric frontier) and nonparametric approach (Data Envelopment Analysis-DEA). The main advantage of the econometric frontier is related to several well-developed statistical tests, which could be used in order to investigate the validity of the model specification. However, the assumption of normality of errors influences the accuracy of these hypotheses (Barros, C. and Leach, S., 2006). Unlike the econometric approach, DEA allows the use of multiple inputs and outputs but does not require any functional form on the data, neither does it make distributional assumptions for the inefficiency term (Mirfakhr-Al-Dini, S., Aghda, A., 2011).

In this paper, I adopt the econometric frontier approach and the data for this study were gathered from National Institute of Statistics for period 1992-2011 and were analyzed by software Eviews 7. Given that the main source of financing football sports organization is sponsorships provided by companies the main aim of the study is to test the relation between football organizations and economic growth. To do so, I use log of football organizations (OS) as a proxy for dependent variable and log of Gross Domestic Product Per Capita (GDPPC) as a proxy for independent variable. I hypothesize that if there is economic growth, firms’ record higher performance and are willing to support sports activities due to tax advantages, i.e. a positive association between football organizations and economic growth is expected.

A useful tool in the analysis at begin is a graphical inspection between independent variable and dependent variable (Boţoc, C., 2013). The scatter diagram between OS and GDPPC is reported in figure no. 2.

![Figure no. 2 - The relation between football organizations and economic growth 1992-2011](image)

Source: author calculation

The scatter plot suggests that the association between variables, OS and GDPPC is not linear, and record a quadratic U-shape. As the chart illustrates, the highest number of football organizations is associated with either lowest or highest GDPPC. This preliminary result is tested in
depth using OLS econometric technique. Based on the methodology aforementioned, the specific empirical model is:

$$OS_t = \alpha + \beta_1 \cdot \log(GDPPC) + \beta_2 \cdot \log(GDPPC)^2 + \varepsilon_t$$ \hspace{1cm} (1)

where “OS” represent the number of football organization, “GDPPC” represent log of Gross Domestic Product Per Capita, and \(\varepsilon_t\) is the idiosyncratic error component. The regression results are reported in Table no. 5.

### Regression analysis

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>GDPPC</td>
<td>-0.805970</td>
<td>0.081499</td>
<td>-9.889304</td>
</tr>
<tr>
<td>GDPPC</td>
<td>0.052333</td>
<td>0.005276</td>
<td>9.918394</td>
</tr>
<tr>
<td>CONSTANT</td>
<td>10.77703</td>
<td>0.305052</td>
<td>35.32851</td>
</tr>
</tbody>
</table>

R-squared: 0.660395  Mean dependent var: 7.856602
Adjusted R-squared: 0.620442  S.D. dependent var: 0.174633
S.E. of regression: 0.196779  Schwarz criterion: 1.334171
Log likelihood: 17.83531  Hannan-Quinn criter.: -1.454374
F-statistic: 16.52911  Durbin-Watson stat: 2.069660
Prob(F-statistic): 0.000103

Source: author calculation

Thus, the regression results do not reject the preliminary result suggested by scatter plot. There is a non-linear association between football organizations and economic growth since both GDPPC and square of GDPPC are significant. Surprisingly, GDPPC is negatively correlated with OS while square of GDPPC is positively correlated. This highlight there is a minimum level of GDPPC (around 2457.5 RON) from where business environment could support sport activities.

In terms of significance, the model is statistically significant with F-statistic equal to 16.529 and p-value 0.000 and does not exhibit autocorrelation of errors since Durbin-Watson equal to 2.07. Furthermore, around 66% of variations in football organizations could be explained by GDPPC. This mean there are other financing sources than companies sponsorships.

### Conclusions

Sport has a range of unique features, such as: the development of irrational passions of humans; differences in the way we judged performance; interdependent nature of the relationship between sports organizations; anti-competitive behavior; The product sports (a game or a contest) has a variable quality; enjoys a high degree of loyalty; fans proved to have less optimism high; sports organizations are reluctant in adoption of new technologies; often, sports is characterized by limited time offer. A number of environmental factors influence the operating mode of sports organizations, namely: globalization, government policy, professionalism and technological developments. Sports industry can be defined as consisting of three distinct components, but
interdependent: public sector, voluntary sector or non-profit-making and commercial sector or professional. These sectors will not operate in isolation, but also to launch often in joint projects.

Some aspects related to sports management are unique, being linked to: strategic management, human resources management, leadership, organizational culture, a governess and management performance. Effective management of human resources within sports organizations is based on implementation of a set of processes interdependent. Human resources management strategies are essential for the success of organizations, namely: planning, recruitment, selection, orientation, and training, performance evaluation, rewarding and keeping. Management of human resources effectively allows them sports organizations to cope with specific and unique challenges, such as place athletes in professional sports organizations and the large number of individuals volunteers required for major events. On the other hand, a human resources management weak may generate a low level of satisfaction for employees, who will lose their devotion to the organization. In short, efficiently and systematically human resources management should be seen as an important tool in management for any organization, regardless of size or type.

With respect to performance management, it might be asserted that can bring substantial benefits sports organizations, despite the costs involved. There is no system of performance management perfectly. It depends on the organization's special features sporting events, strategic objectives and of the environment in which they operate. A good starting point is represented by the model of Kaplan and Norton, which can be customized to specific needs of the organization. The model with 9 dimensions offers a range of possibilities, but the indicators are quantifiable factors, to be linked to the objectives of the organization's primary and in accordance with the stakeholder's expectations.

The results from the study performed suggest there is a non-linear relation between football organizations and economic growth, with a minimum level around 2457.5 RON and also 66% of variations could be explained by GDPPC.

References