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ORIGINAL ARTICLE

## **MEASURING INTELLECTUAL CAPITAL FOR FOOTBALL CLUBS: EVIDENCE FROM TURKISH FIRST DIVISION FOOTBALL LEAGUE**

### *Abstract*

In sports industry intangible sources such as fan loyalty, the talent players, the experience of the management team become more and more important in creating team value. There is a growing awareness that intellectual capital is a key asset for clubs' financial success. Therefore this study is a pioneering effort to determine and compare the intellectual capital of Turkish First Division football clubs whose shares are publicly traded at the Istanbul Stock Exchange (ISE). In the analysis part of this study, determining and comparing the intellectual capital ratios of this publicly traded clubs has been aimed. To this aim the concept of intellectual capital was analyzed with the Value Added Intellectual Capital (VAIC) Method. The findings indicate that Galatasaray Sport Club uses its intellectual capital more efficiently. Higher intellectual capital value means higher market share for football clubs. Therefore from sports management perspective the major football clubs should develop their intellectual capitals.

**Key Words:** Intellectual capital, method, value added intellectual capital (vaic), Turkish football clubs

## INTRODUCTION

Transition from industrial society to knowledge-based society has brought about some changes in the fundamentals of the economic structure. With the transition to the 'New Economy' the importance attributed to the physical capital (buildings, machinery, etc..) which is the main characteristic of the industrial society, has been replaced by the importance attributed to intangible assets such as knowledge, skill and communication. In the early 20<sup>th</sup> century, with the development of the technology, the meaning of capital has also been changed and come to include different meanings. In the period of industry-based economy, physical capital was the only determinant of the production process and firm profitability. The development of the financial markets with the globalization process has bring the financial capital into prominence for the enterprises. With the transition to the information-based economy, human capital and intellectual capital (IC) has become important functions of the concept of capital. The fact that the importance of the knowledge increases among the other production factors has resulted in an increase of the value of intangible assets for enterprises. In creating firm identity and in the process of creating firm value, intangible resources derive more value than physical and financial capital.

During the recent years intangible assets have become an important source that provides competitive advantage among the firms. The firms want to manage and evaluate their intellectual capital in the best manner. Therefore, it has become an organizational need to measure and valuate the intellectual capital (IC) resources. During the recent years, many studies have been made about the concept and valuation of IC.

The purpose of this study is to examine the existence of the intellectual capital in the football industry. In parallel with this purpose, the existence of the intellectual capital in the football industry will be discussed theoretically and IC will be calculated for Turkish First Division Football Clubs of which their shares are publicly offered and enlisted on ISE. In the first section of the study the concept of IC and the IC components for sports industry were explained briefly. In the following section the data and methodology used in the analysis were explained. The results are dealt with in the last section. The study ends with some brief concluding remarks.

## **Intellectual Capital**

As the importance of the intangible assets such as knowledge of the employees, enterprise and customer relations, trademark loyalty, market dominance etc. is understood in creating firm value and enhancing profitability, many studies have been made relating to the term, phenomenon and measurement for the concept of Intellectual Capital in the literature. The assets constituting the Intellectual Capital are also called intangible assets because they are not included in the book of accounts.

Although there is no consensus for the definition of the Intellectual Capital, the opinions and definitions brought forward are of complementary nature for each other. According to Edvinsson (1997), Intellectual Capital is the whole of the professional skills, customer relations, organizational technology, experience and knowledge to create an advantage in competition for the firm in the market. Although completely different definitions have been made for IC, according to Ross (1997), the following general conclusions are reached with regards to the concept when all the definitions are examined:

- Intellectual capital is the sum of the “hidden” assets that are not exactly found from the balance sheets of the enterprise.
- Intellectual capital is the basic source to ensure sustainable competitive advantage for the enterprises.
- Management of the intellectual capital of the enterprise is an important managerial responsibility.
- The growth and decline of intellectual capital can be called intellectual performance.
- A systematic approach is needed to measure intellectual capital.

Intellectual capital consists of interdependent intangible resources. According to the Ross et al. (1997) intellectual capital includes human capital and structural capital. They divided human capital into competence, intellectual agility and attitude, and structural capital into relationships, organization and renewal and development. Edvinsson (1997) divide intellectual capital into human capital and structural capital. Taking the classification by Bassi (1997) into consideration, the IC of an enterprise consists of three main components, human capital, structural capital and relational capital.

Human capital can be described as individual skills such as talent, experience, knowledge and competence of the enterprise employees and managers. Human capital also includes motivation in addition to knowledge and skills (Roos and Roos, 1997:415)

Structural capital covers all the assets based on knowledge in an enterprise excluding the human factor. The skills, talents and experiences of the enterprise employees may not be used without the proper supporting tools. Thus, the strategies, operational plans, information transformed into organizational knowledge and corporate culture of an enterprise are classified as structural capital.

According to Leliaert (2003), the relational capital (customer capital) consists of the long-term relationships that the enterprises have with other firms, suppliers and other related industries. They are listed as customer relations, network partner relations, supplier relations and investor relations.

The concept of intellectual capital is not only be found in the sectors based on knowledge and technology. Football industry has also the position of a sector with intellectual capital due to its structural characteristics. Nowadays, football is not only a branch of sport but also it has become an industry that should be managed according to the profit maximization principles with strategic and financial techniques. In the management of football clubs achieving sportive success with the lowest financial constraints was the only purpose in the past but nowadays the financial expectations become more important. Football clubs have created their own income and expenditure items and thus they have transformed into an enterprise. It has become an important issue to transform sportive success into firm profit. In this process, the importance of the intellectual capital for the sports industry has become more and more important. There is a growing awareness that intellectual capital is a key asset for clubs' financial success. The comparative advantage which is the main factor that determines the football clubs success and thereby the revenue can be provided with higher intellectual capital ratios.

In sports industry intangible sources such as fan loyalty, the talent players, the experience of the management team become more and more important in creating team value. It is seen that the components of the intellectual capital are valid for football industry as well. Football clubs own mostly intangible resources. The long term success of the sports club, its

performance, fan loyalty, number of championships won, number of talented players, skills of the directors etc. stand out in the process of creating value, while they are not included in financial reports (Andrikopoulos A., Kaimenakis N; 2006;4).

### **Measuring Intellectual Capital**

From the beginning of Intellectual Capital research, the question of measuring IC has gained great interest. Different techniques have been developed in measuring IC. Conceptually, as mentioned by Stewart (1997), there are two approaches to measure IC; measuring each IC component separately or measuring the IC components as a whole. However, the fact that the loan organizations, potential investors and the suppliers working with the enterprise want to assess the enterprise as a whole, measuring all the IC components as a whole is more logical (Quoted by Uzay and Savaş: 2003:167).

In the study by İşeri and Kayakutlu (2003), the methods used for measuring the IC on the enterprise level, which determine whether the enterprise actually has intellectual capital or not, are listed as the Market to Book Ratio, Tobin's Q Ratio and the calculation of the intangible assets, which are preliminary assessment methods. Balance score cards, monitoring abstract assets and intellectual capital ratio methods, are grouped as the second-part methods, used to determine the accumulated assets of an enterprise (İşeri, Kayakutlu; 2003: 87).

Market/Book Ratio should be measured by dividing the Market Value, which is found by multiplying the unit price of the shares of the enterprise with the number of the shares, to the asset value of the enterprise found after subtracting liabilities. This ratio also enables the enterprise to be compared with other enterprises in the same industry and also enables the industries to be compared with each other. The enterprises have the chance to determine their position in the industry and the improvements that they should perform for themselves (Demirkol:2006:100). The disadvantages of this method, which is easy to measure, can be listed as variability of the share prices in the stock exchange and the tendency to represent the book value as lower than the actual value due to the legal flexibilities in depreciation records (Uzay and Savaş:2003:167). This method can be easily used for the enterprises which are publicly offered and listed in the stock exchange market.

Tobin's Q Ratio is an another method used in the measurement of the IC. Q Ratio represents the ratio of the market value of the enterprise to the replacement cost, which is the

cost to replace the existing production capacity. The market value means the going price in the market for exchanging existing assets. The replacement value means the price in the market for the newly produces commodities. Tobin's Q ratio method can be used to measure the IC both for the entire enterprise and for each enterprise asset and it is calculated as follows (Uzay and Savaş:2003:168, Demirkol:2006:100-101).

$$\text{Intellectual Capital} = \text{Market Value} / \text{Asset Replacement Cost}$$

The fact that Tobin's Q ratio is higher than 1 means that the enterprise has intellectual assets of high value and gains high yields from such assets (Çıkrıkçı and Daştan: 2002:25). The criticism about the Market/Book Ratio about the variability of the market value is also valid for this method. However, it is seen that this method eliminates the negativity caused by depreciation methods by taking into account the replacement value for the assets (Demirkol:2006:101).

The method of calculating the Intangible Assets is also another method used in the literature. By this method, the value of the intangible assets is found by calculating the yields of the tangible assets and deducting the portion corresponding to the tangible assets from such yields. This method gives comparable results but it is criticized for yielding too high and too low results as the industry average is received from extreme values and as it is difficult to calculate.

## **DATA and METHODOLOGY**

The sample for this study comprises of the incorporate companies belonging to sports clubs whose equity shares are traded in Turkey and Istanbul Stock Exchange (ISE) and which display activity in UEFA Leagues. The Sportive Incorporated Companies being traded in ISE in Turkey are Fenerbahçe Sportif Hizmetler Sanayi ve Ticaret A.Ş., Beşiktaş Futbol Yatırımları Sanayi ve Ticaret A.Ş., Galatasaray Sportif Sınai ve Yatırımlar A.Ş., and Trabzonspor Sportif Yatırım ve Ticaret A.Ş. Although there are 4 football teams traded in ISE (Beşiktaş, Fenerbahçe, Galatasaray and Trabzonspor), only the data of Galatasaray and Beşiktaş teams have been used. The reason for not using the data of the other two teams is that no information as to the money paid to the players and transfer fees was found in the financial tables and footnotes of these teams. The date used in the study have been compiled from the financial tables and footnotes sent by the teams to ISE. For the market values of the

companies, the data of ISE dated 31.12.2010 have been taken into consideration.

The IC of the sports companies are calculated according to the “Value Added Intellectual Coefficient-VAIC”, which was developed by Ante Pulic. The method of Value Added Intellectual Coefficient is a method assessing how and how much the intellectual capital is efficient, the value created by the intellectual capital and the capital employed, and whether or not these elements are final sources for the success of an enterprise.

In Value Added Intellectual Coefficient Method, 3 types of efficiency are calculated and summed. These are as follows:

1. Capital Employed Efficiency - CEE
2. Human Capital Efficiency - HCE
3. Structural Capital Efficiency – SCE

$$VAIC_i = CEE_i + HCE_i + SCE_i$$

To calculate the CEE, HCE and SCE, first of all the total value created by the enterprise (Value Added - VA) should be calculated. This calculation is as follows:

$$VA_i = I_i + DP_i + D_i + T_i + M_i + R_i + WS_i$$

Here;

$VA_i$  = Total value added created by the  $i_{th}$  enterprise

$I_i$  = Interest expenses of the  $i_{th}$  enterprise,

$DP_i$  = Depreciation costs of  $i_{th}$  enterprise

$D_i$  = Dividends of  $i_{th}$  enterprise,

$T_i$  = Corporate tax of  $i_{th}$  enterprise,

$M_i$  = Participation revenues of  $i_{th}$  enterprise,

$R_i$  = Retained earnings of  $i_{th}$  enterprise,

$WS_i$  = Total salary and wage costs of  $i_{th}$  enterprise.

The calculation of value added amounts created by the sport companies can be seen in the following table.

**Table 1:** The Total Value Added Created by The Sport Companies

	<b>Galatasaray</b>	<b>Beşiktaş</b>
Interest Expenses	25516945	27432438
Depreciation Costs	3752297	31279237
Dividend Amaounts	17663800	0
Corporate Tax	0	0
Participation revenues	0	0
Retained earnings	76387704	0
Total Salary and Wage Costs	10691455	89399589
<b>Total Value Added</b>	<b>134.012.201</b>	<b>148.111.264</b>

The capital employed efficiency coefficient is calculated by way of dividing the total value added to the capital employed. The capital employed is the book value of the enterprises and the formula below indicates the capital employed efficiency coefficient:

$$CEE_i = VA_i / CE_i$$

$CEE_i$  = Capital employed efficiency coefficient for the  $i_{th}$  enterprise,

$VA_i$  = Total value added created by  $i_{th}$  enterprise,

$CE_i$  = Capital employed for the  $i_{th}$  enterprise (book value of the assets).

The calculation of efficiency coefficient of the capital employed by the sport companies is indicated in the Table 2.

**Table 2:** Efficiency Coefficient of The Capital Employed

	<b>Galatasaray</b>	<b>Beşiktaş</b>
Total Value Added	134.012.201	148.111.264
Book Value of the Assets	455.382.526	225.776.991
<b>Capital Employed Efficiency</b>	<b>0.294</b>	<b>0.656</b>

When the efficiency of capital employed is compared it can be asserted that the Beşiktaş Sports Club employs its capital more efficiently than the Galatasaray Sports Club.

The formula below indicates the human capital efficiency coefficient:



$$HCE_i = VA_i / HC_i$$

$HCE_i$  = Human capital efficiency coefficient for the  $i_{th}$  enterprise,

$VA_i$  = Total value added created by  $i_{th}$  enterprise,

$HC_i$  = Total salary and wage costs for the  $i_{th}$  enterprise .

Pulic, sharing the same opinion with the other intellectual capital authorities such as Edvinson (1997) and Sveiby (2001), argues that the fundamental indicator of the human capital of an enterprise is constituted by the total salary and wage costs. For this reason, the human capital efficiency coefficient is obtained by way of dividing the total value added to the total salary and wage paid by the enterprise to its employees.

**Table 3:** Human Capital Efficiency Coefficients

	<b>Galatasaray</b>	<b>Beşiktaş</b>
Total Value Added	134.012.201	148.111.264
Total Salary and Wage Costs	10.691.455	89.399.589
<b>Human Capital Efficiency</b>	<b>12.53</b>	<b>1.66</b>

It is observed that the club using its capital most efficiently among the investigated sport clubs is Galatasaray. Even though Galatasaray creates less value added (in terms of quantity) than Beşiktaş, while the coefficient of wages paid and the value added created by Beşiktaş Club is 1.66, Galatasaray Club achieved a higher Human Capital Coefficient with 12.53. While these evaluations are made, it has been assumed that the both clubs included all the charges they paid to their players in the total salary and wage expenditures.

For calculating the structural capital efficiency, the structural values of the enterprise should be determined at the first step. It is possible to calculate this by deducting the human capital from the added value created by the enterprise.

$$SC_i = VA_i - HC_i$$

$SC_i$  = Structurel capital for the  $i_{th}$  enterprise,

$VA_i$  = Total value added created by  $i_{th}$  enterprise,

$HC_i$  = Total salary and wage costs for the  $i_{th}$  enterprise.

It has been determined as a result of the previous empirical findings that there is an inversely proportional correlation between the human capital and structural capital during the process of creating value characterized by the assets of intellectual capital. In this case, the formula used in the calculation of structural capital is different from the formula used in the calculation of efficiency of capital employed and efficiency of human capital. So, the structural capital efficiency can be figured out by way of dividing the total of structural capital owned by the enterprise to the total added value created by the enterprise.

$$SCE_i = SC_i / VA_i$$

$SCE_i$  = Structural capital efficiency coefficient for the  $i_{th}$  enterprise,

$SC_i$  = Structural capital for the  $i_{th}$  enterprise

$VA_i$  = Total value added created by  $i_{th}$  enterprise.

**Table 4:** Structural Capital Efficiency Coefficients

	<b>Galatasaray</b>	<b>Beşiktaş</b>
Structural Capital (VA-HC)	123.320.746	58.711.675
Total Value Added	134.012.201	148.111.264
<b>Structural Capital Efficiency</b>	<b>0.92</b>	<b>0.40</b>

After all these calculations, the coefficients of three main components are summed up to find the intellectual total value added coefficient. The Table 5 below presents the intellectual capital coefficients of sport clubs (Galatasaray and Beşiktaş).

**Table 5:** Intellectual Capital Coefficients

	<b>Galatasaray</b>	<b>Beşiktaş</b>
Capital Employed Efficiency	0.29	0.66
Human Capital Efficiency	12.53	1.66
Structural Capital Efficiency	0.92	0.40
<b>Intellectual Value Added Coefficient</b>	<b>13.75</b>	<b>2.71</b>

As can be seen in the Table 5, Galatasaray Sport Club uses its intellectual capital more efficiently compared to the Beşiktaş Club. It is also outstanding that the human capital in

sport clubs has a more distinctive role in the intellectual capital.

## CONCLUSION

In this study, it has been tried to determine whether or not there is intellectual capital in the sport enterprises seeking profit in Turkey. According to the April 2011 data of General Directorate of Youth and Sports, there are totally 10.665 sport clubs in Turkey acting as military, specialty, enterprise, school and sport club displaying activity in different fields overall Turkey. Among these sport clubs are ones which display activity as enterprises engaged in many different fields and seeking profit. The equity shares of only four of these enterprises are traded in the stock exchange. Looking at the total number, it can be seen that since very small proportion of the sport clubs display activity in ISE in the sport sector, the sport clubs in Turkey are currently at the beginning of the process of incorporation and institutionalization. In order to mention about the concept of intellectual capital, the enterprises should be able to compete with the other enterprises and display activity as profit seeking enterprises. This study could be expanded by applying this method for the clubs taking place in the European leagues. Likewise, the similar studies to be conducted in the future will create opportunity in order to compare the intellectual capital differences between the countries. Furthermore, with the surmounting of financial difficulties in accessing the financial data of enterprises, using other intellectual capital measuring tools which give more reliable results will render the studies more comprehensive and reliable.

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