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APPLICATION OF MCDA TO EVALUATE FINANCIAL FAIR PLAY AND FINANCIAL STABILITY IN EUROPEAN FOOTBALL CLUBS

Aplicación de MCDA para evaluar el juego limpio financiero y la estabilidad financiera de los clubes de fútbol Europeos

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ABSTRACT: This paper aims to design a methodology to evaluate financial stability in the football industry. Considering Financial Fair Play Regulations (UEFA, 2012, 2015), it explores how they have worked. This paper adapts Multiple-Criteria Decision Analysis (MCDA) to the football industry. A number of ratios and their corresponding weights are defined. Four MCDAs are used. The results from these four MCDAs are then taken into account to finally classify the financial situation of the clubs. The study was carried out on top European Football clubs for the seasons ending in 2011, 2012 and 2013. The main change in the financial situation of analyzed clubs occurred in season 2011/12, the time when FFP rules were enforced. The results show that big European clubs are financially stable. Moreover, some progressive improvements in stability and sustainability have been encountered. The tool applied in this study may be used by stakeholders in this industry. Moreover, it shows that financial control imposed by UEFA is being beneficial what encourages keeping in this line of action. The paper provides a fast and efficient technique in decision-making to the stakeholders in the football industry.

KEY WORDS: Financial Fair Play; Financial Stability; Football; Multiple-criteria Decision Analysis; UEFA

RESUMEN: *Este artículo tiene como objetivo diseñar una metodología para evaluar la estabilidad financiera en la industria del fútbol. Teniendo en cuenta el Reglamento de Juego Limpio Financiero (UEFA, 2012, 2015), explora cómo éste ha funcionado. Se adapta el análisis de decisión de criterios múltiples (MCDA) a la industria del fútbol. Se definen una serie de relaciones con sus pesos correspondientes. Se usan cuatro MCDA. Los resultados de estos cuatro MCDA se tienen en cuenta para clasificar la situación financiera de los clubes. El estudio se llevó a cabo analizando, como casos, los principales clubes de fútbol europeos para las temporadas que finalizaron en 2011, 2012 y 2013. El principal cambio en la situación financiera de los clubes analizados se produjo en la temporada 2011/12, el momento en que se aplicaron las normas de FFP. Los resultados muestran que los grandes clubes europeos son financieramente estables. Además, se han encontrado algunas mejoras progresivas en la estabilidad y la sostenibilidad. La herramienta aplicada en este estudio puede ser utilizada por los stakeholders de esta industria. Además, muestra que el control financiero impuesto por la UEFA es beneficioso, lo que alienta a mantenerse en esta línea de acción. El artículo proporciona una técnica rápida y eficiente en la toma de decisiones para los interesados en la industria del fútbo*l

PALABRAS CLAVE: Juego Limpio Financiero; Estabilidad Financiera; Fútbol; MCDA; UEFA

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1. Introduction

Professional football has a growing social, media and economic importance. According to Matheson (2003), football is the most popular sport in the world. In 2015, the five teams with higher number of followers in Facebook - FC Barcelona, Real Madrid, Manchester United, Chelsea and Arsenal, in descending order - totaled 322.5 million supporters (Deloitte, 2016). This represents a 63.48% of the total population of the euro-zone, according to official data handled by Eurostat (2016). In the same line, Barajas and Rodríguez (2014), Franck (2010) and Morrow (2013) argue that European football have an undeniable social content.

European economies have experienced a severe financial crisis in 2008-2009 and still its effects are felt. However, football clubs have steadily increased their income during that period - 42.65% growth between 2007 and 2012, with the notable progression from 14.79% in the last year. Deloitte (2014) report stated that this positive revenue growth in the coming seasons. It has been confirmed in Football Money League 2015 and 2016 (Deloitte, 2015; Deloitte, 2016). However, European football clubs do not report a good financial situation (Barajas & Rodriguez, 2014; Kuper & Szymanski, 2009; Mourão, 2012; and Serby, 2014). Thus, the steady increase in their income has not meant an improvement in their financial positions.

Kuper and Szymanski (2009) underline that European football clubs do not have a good financial situation but emphasize that the survival rate in the sector is very high. For these authors, a football club can be relegated, lose their best players, be poorly managed and even constantly running up debt but finally it will be rescued in some way. Gabin (2013), Solberg and Haugen (2010), and Storm and Nielsen (2012) state that the bodies of financial control of clubs and public administrations are flexible and permissive with the compliance of financial regulations and taxation. This feature is called moral hazard (Franck, 2014; Kuper & Szymanski, 2009).

This situation raised concern in the competent governing bodies such as the Union des Associations Européennes de Football (UEFA). Thus, UEFA created the Financial Fair Play Regulations (FFP). These regulations have among their main objectives, to improve the economic and financial capacity of clubs and protect the integrity of competitions (UEFA, 2012).

The Financial Fair Play has become an extensive research topic after its implementation. Szymanski (2014) and Franck (2014) developed two comprehensive analysis of the FFP, showing some potential benefits as well as negative implications. A point emphasized by those aforementioned authors is that this regulation may maintain the inequality among the clubs, which is corroborated by Sass (2016). He adds that this regulation shall constraint small clubs to invest more in players and therefore the big clubs could totally dominate the championship, decreasing the competitive balance. Another interesting scrutiny of FFP is performed in Peeters and Szymanski (2014) paper. For measuring the inequality, a tool as what is presented here can useful.

At the same time, some other impacts of FFP have been researched as well. Dermit-Richard, Scelles and Morrow (2017) compare the UEFA FFP with the French regulations, demonstrating that their co-existence result in disparities among domestic clubs. Acero, Serrano and Dimitropoulos (2017) examine the relationship between ownership structure and financial performance of European clubs comparing it pre- and post-FFP implementation. They demonstrate that regulating bodies need to develop some other control mechanisms related corporate governance, transparency and ownership structure to turn the FFP a more effective regulation. Dimitropoulos (2014) also suggests some governance principles that could enrich the current FFP. Other research lines related to UEFA Financial Fair Play lies in the audit selection process before and after its implementation (Dimitropoulos, 2016), the clubs' profitability after FFP (Nicoliello & Zampatti, 2016), and potential problems derived from the FFP considering the agency theory perspective (Schubert, 2014).

According to Morrow (2013), the stakeholders in the industry are not aware of the financial situation that most of professional European football clubs are going through. Neither they are aware of the consequences caused widespread irrational management in the industry. However, the researcher does not attribute exclusively the low awareness to the fans lack of interest to financial issues. Morrow (2013) states that the club should provide financial information to supporters in order to make them to feel as part of the state of their team. Indeed, it turns even more important once Leach and Szymanski (2015) have evidenced that some European football clubs would be more oriented to profit maximization than are habitually considered. Thus, he suggests that financial information be fully accessible to the stakeholders, highlighting even the crucial information.

Now, many clubs have incorporated into their webpages, available to fans, the annual financial statements, once they are approved. Seeking greater economic impact on stakeholders, therefore they assume that these groups gain awareness of the environment that club owners feel. However, there are other possible methods to bring fans the economic reality of the club, providing more elaborate information. One of these methods is called Multiple-Criteria Decision Analysis (MCDA). According Zopounidis (1999), this technique is based on qualitative criteria - through ratios and weights- and makes that decision-making process improves by reducing subjectivity.

Due to the limited economic and financial information available to fans and based on the mechanisms of the Financial Fair Play Regulations (2012), this study aims to develop an analysis of the top clubs in European professional football according to levels of sustainability and economic and financial stability. Through the Multiple-Criteria Decision Analysis method, the present research aims to provide a fast and efficient technique in decision-making to the stakeholders in that industry.

2. Football industry features

Professional football industry differs from other business sectors in its economic and financial characteristics. It is noted that big clubs present an anomalous financial

management, with high-revenues, high investment in sports staff and a permanent economic imbalance. Moreover, there are divergent rules between national leagues, a fact that creates differences between clubs and leagues, allowing financial and sporting imbalances. Moreover, even the management objective of football clubs is different from other industries - since profit is not a common priority. Szymanski (2015) provides an overview of some financial aspects on professional football as well as Andreff and Szymanski (2006) and Dobson and Goddard (2011) offer a broad examination of sports economics. Therefore, it is necessary to know the financial environment in which this industry operates to establish a whole of variables and ratios that represents the financial reality of professional football in Europe. The following sub-sections describe the main characteristics of that market.

2.1. The peculiarities of professional football industry

Neale (1964) introduced the idea that professional sports are a peculiar economy. In sports, cooperation among the participants it is necessary - in addition to the competition. Football implies a minimum of two clubs to create the main products of the industry (matches and championships). In that line, Barajas (2005), Fort and Quirk (2004), Morrow (2013), Solberg and Haugen (2010) and Vöpel (2013) state that for having attractive and demanded football events, the competition needs to be uncertain.

Another dilemma exists in the football industry. It is related to the divergent rules between various European leagues. These differences are highlighted by Franck (2010), Gabin (2013), Gouguet and Primault (2006) and Solberg and Haugen (2010). There are significant differences among countries in taxation, transfers rules, limits for the number of foreign players on the pitch and various legal and accounting characteristics. A homogeneous regulation would act on equal terms, to all participants in the national leagues and international competitions. In this regard, UEFA (2012) wanted to get a common legislative scenario. However, it will apply only for those clubs participating in competitions promoted by the UEFA.

2.2. Financial management in professional football

The professional football market moves high financial resources. As shown in Table 1, all ten clubs with higher revenues got more than 320 million euros each in season 2014/15. Kuper and Szymanski (2009) underline that this amount is tiny compared to large global companies, but they are not so small. However, despite the financial crisis that most European economies have experienced since fiscal year 2008, the ten largest European professional football clubs increased their revenues by about 8% in 2012/13 (Deloitte, 2014).

Morrow (1999) explains that for many years ticket sales were the only source of revenue for football clubs. However, nowadays revenues are originated in different ways, such as broadcasting rights, sponsorships, merchandising and also through tickets (Szymanski, 2015).

Ascari and Gagnepain, (2006), Barajas (2007), Dietl et al. (2008), Drut, (2011), Drut and Raballand (2012), Franck (2010), Gabin (2013), Gouget and Primault (2006), Morrow (2013) and Vöpel (2013) agree that the continued growth in revenue is due to better contracts of broadcasting rights and the increase in the transfer value of players. However, when analyzing the Football Money League report, it is perceived that the other sources of income also tend to increase each season.

Table 1: Classification of the biggest football clubs in Europe based on their revenues

Season 2014/15 (millions Euros)		
Ranking	**Club**	**Revenues**
1	Real Madrid	577
2	FC Barcelona	560,8
3	Manchester United	519,5
4	Paris Saint-Germain	480,8
5	Bayern Munich	474
6	Manchester City	463,5
7	Arsenal	435,5
8	Chelsea	420
9	Liverpool	391,8
10	Juventus	323,9

Source: Football Money League 2015 (Deloitte, 2015)

Ascari and Gagnepain, (2006), Barajas and Rodríguez (2014), Boscá et al. (2008), Dietl et al. (2008), Drut and Raballand (2012), Franck (2010), Gabin (2013), García and Rodríguez (2003), Gouget and Primault (2006), Morrow (2013), Mourão (2012), Müller et al. (2012), Peeters and Szymanski (2014), Solberg and Haugen (2010) and Vöpel (2013) maintain that the increase in income goes mainly to spending on sports staff (players and coaches). This practice is considered as the key factor in the financial imbalance in the industry. According Drut and Raballand (2012) and Franck (2010) operate above their spending capacity implies that clubs, year after year, present worrying financial results. Dietl et al. (2008) stress the idea that consequence of this questionable financial management in the medium-term is that a structural financial weakness in its annual accounts is perpetuating.

The literature explains that behavior adopted by the teams. Sloane (1971) defines football clubs as Utility Maximizers. Kuper and Szymanski (2009) corroborate the weak relationship between financial benefits and sporting success in English football. Kuper and Szymanski (2009), Szymanski (2015) and Szymanski and Kuypers (1999) show the high correlation between sporting performance and player salaries. In addition, Garcia-del-Barrio and Szymanski (2009) empirically confirm that behavior that tent to maximize victories. Thus, it is explained that clubs be eager to increase revenue to allow greater investment and expenditure on players instead of getting financial gain.

However, Kuper and Szymanski (2009) remark that the clubs have to be better managed, because not pursue profit is not the same as having accumulated losses.

In recent years, there has been a behavior in the football industry considered by many as "financial doping". Due to the extremely competitive market and the common goal of maximizing wins, numerous clubs have welcomed wealthy individuals called Sugar Daddies. Ascari and Gagnepain, (2006), Barajas and Rodriguez (2014), Franck and Lang (2013), Gabin (2013), Garcia-del-Barrio and Szymanski (2009), Gouget and Primault (2006), Kuper and Szmanski (2009), Morrow (1999), Morrow (2013), Mourão (2012) Müller et al. (2012), Peeters and Szymanski (2014), Solberg and Haugen (2010), and Storm and Nielsen (2012) state that this resource is one method more among others for financing used by some clubs. UEFA seeks to restrain that kind of cash injection through Break-even requirement and No overdue payables (UEFA, 2012). That way, seeks to limit overspending of clubs in sporting staff, encouraging clubs to operate on the basis of their own revenues.

Although football clubs have as their primary objective maximizing sporting performance, good economic and financial management will provide them balance in their accounts and continued capacity of investment. Funding through Sugar Daddies may provide short-term success but does not guarantee future success if the club is not well managed. Once Plumley, Wilson and Shibli (2017) have previously analysed the financial performance of football clubs in the English Premier League and Chelmis, Niklis, Baourakis and Zopounidis (2017) the Greek Superleague, the present paper aims to investigate this issue on European level. Therefore, this article seeks to analyze the financial statements of some major European clubs and investigate the level of stability and sustainability of these clubs.

3. Methods

This study develops an analysis of the stability and financial sustainability of some of the major professional football clubs in Europe through the method of Multiple-Criteria Decision Analysis considering the Financial Fair Play Regulations by UEFA (2012). According to De Montis et al. (2000) and Munda (1995, 1996) the MCDA methods are useful and appropriate for measuring management and financial sustainability. Ginevičius and Podviezko (2013), Munda (1995) and Podviezko (2011) agree that the multi-criteria methods establish the best alternative on the same scenario. Podviezko (2011) states that the main result of MCDA is the integration of the values of the different variables along with their proportional weights in a single magnitude.

Although lately the use of multi-criteria methods applied to sports is observed, there are still few investigations that have employed them. Through the Technique for Order Preference by Similarity to Ideal Solution (TOPSIS), Huang (2013) and Liu, Li and Zhang (2015) evaluated the performance of teams and sports coaches respectively. Ecer and Buyukaslan (2014) and Sakinç (2014) have carried out financial studies on Turkey football teams using Grey Relational Analysis (GRA), one of the MCDA techniques.

The methodology used in this article is based on the study of Ginevičius and Podviezko (2013) on financial institutions. In it, they consider a series of financial ratios with their proportional weights to assess the financial value of each of the studied entities. The four methods used in Multiple-Criteria Decision Analysis are as follows: Simple Additive Weighting (SAW), Complex Proportional Assessment (COPRAS), Technique for Order Preference by Similarity to Ideal Solution (TOPSIS) and Preference Ranking Organization Method for Enrichment of Evaluations II (PROMETHEE II). From the results of the four methods a classification of the entities is set out.

3.1. Ratios

Profit ratios

First, ratios based in profit are exposed. These ratios weight positively to clubs with better financial results and higher profits levels. Three ratios based on profit are proposed.

NP/OP = Net profit / Operating profit

Among the objectives of the UEFA (2012) are the improvement of the economic and financial capacity of clubs and higher discipline and rationality in their finances. In this line, the NP/OP ratio weights positively to those clubs that regardless of the operating management, be able to obtain good financial results. This ratio supports the clubs to obtain a positive financial result.

OP/OR = Operating profit / Operating revenues

The ratio OP/OR rewards clubs that optimize the management of its operating activities. So that with a certain level of revenues the best operating results is obtained. Promote financial discipline and rationality is an objective of UEFA (2012). UEFA chases it by using the Break-even mechanism, among others. This determines the level of spending by the club, looking for an improvement in its results and positively impacting the economic and financial stability.

TOR/TA = Total operating revenues / total assets

The ratio TOR/TA supports clubs that best manage their operating activity considering all invested assets. Managing assets in a profitable and efficient way means to be closer to fulfill the objectives of sound management established by UEFA (2012) and further from the financial irrationality.

Stability ratios

Ratios based on stability are established in second place. Stability evaluation is based on the debt level. The ratios of the Stability criterion negatively weighted high credit positions. Barajas and Rodríguez (2014), Kuper and Szymanski (2009), Mourão (2012),

Peeters and Szymanski (2014), Solberg and Haugen (2010) and Storm and Nielsen (2012) state that the imbalance in the economic and financial structure of the clubs are motivated by high levels of debt. Clubs with greater economic and financial stability and lower debt level will be better valued under this criterion.

STD/TL = Short-Term Debt / Total liabilities

The STD/TL ratio measures the weight of short-term debt regarding the total debt. Total liabilities are the sum of the obligations in the short and long term, together with equity. The ratio penalizes clubs with high levels of short-term debt.

LTD/TL = Long-term Debt / Total liabilities

The LTD/TL ratio measures the percentage of debt that the club should meet long-term regarding the total liabilities. The higher the debt with maturity greater than one year, the worse is the result of the ratio.

WC/CA = (Current Assets – Current liabilities) / Current Assets

The WC/CA ratio measures the percentage of working capital on current assets. The working capital can be understood as the difference between the assets and rights in the short term and also short-term obligations. Therefore, this ratio measures the short term solvency of the club.

Coverage ratios

Ratios based on the ability of clubs to cover against third parties. These ratios support those clubs whose assets and rights sufficiently cover its obligations. They are also directly related to the objectives of the UEFA (2012) to protect the integrity and proper functioning of European competitions, as well as the viability and long-term sustainability of clubs. Thus, the greater the ability of clubs to guarantee against third parties, competitions will be better preserved.

E/TL = Equity / Total liabilities

E/TL ratio measures the net guarantees of the club on the total amount of the creditors.

NCA/TL = Non-current assets / Total liabilities

One of the main measures of coverage against third parties is the non-current assets of a company. Non-current assets correspond to the assets, rights and other goods economically controlled by the company whose liquidity is in a longer term. Regardless of the level of working capital needed in a club, the higher the non-current assets greater the guarantee against debts.

TA/TD = Total assets / (Current Debt + Non-Current Debt)

The TA/TD ratio is indicative of the level of the passive of the club. Greater than or equal to 1 result indicates that the assets and rights are sufficient to cover obligations to third parties; and lower results than 1 confirm that the value of obligations to third parties is superior to the club guarantees.

Liquidity ratios

Liquidity ratios measure the ability of the club to meet their payments in a very short time and with highly liquid assets.

$$\text{Quick ratio} = (\text{Current assets} - \text{Stocks}) / \text{Current liabilities}$$

$$\text{CSTD/CL} = (\text{Cash} + \text{short-term debtors}) / \text{Current liabilities}$$

These measure the most liquid asset items at the end of the fiscal year to meet the short term obligations.

Spending level ratios

The ratios used are based in two of the accounting items that characterize this industry: the level of wage expenditure and operating costs. Drut and Raballand (2012), Franck (2010), Franck and Lang (2013), Garcia-del-Barrio and Szymanski (2009), Peeters and Szymanski (2014), Solberg and Haugen (2010) and Vöpel (2013) indicate that so far, the competitive position of a club is not determined by profitability and ability to generate revenue, but spending capacity, understood as purchasing power. That way, the sporting objective precedes the financial goal.

$$\text{W/OR} = \text{Wages} / \text{operating revenue}$$

The article 62 of the FFP of UEFA (2012) states that personnel cost of clubs should not exceed 70% of total revenues. The ratio W/OR adjusts this proportion weighting personnel costs exclusively on operating revenue - not taken into account other revenues. Operating revenues correspond to: broadcasting revenue, tickets, marketing, merchandising and other operating income. Therefore, this ratio links staff costs (mostly sporting staff) with the main operating revenue. The higher the result, less discipline and rationality the club will have on its finances (UEFA, 2012).

$$\text{W/TR} = \text{Wages} / \text{Total Revenue}$$

Like the above, the ratio W/TR weights staff costs based on revenue. However, here the denominator consists of total revenue. The aim is to gather information on those clubs that have ability to obtain other revenues from its activity in addition to the main operating revenue.

$$\text{W/OE} = \text{Wages} / \text{Operating Expenses}$$

The W/OE ratio weights staff costs on operating costs, allowing to obtain the proportion of operating expenditure that is intended to sports and non-sports staff. The higher the ratio, the lower the club funds allocated to other operating costs and greater imbalance will have on the structure of the income statement. Further, based on the objectives of the UEFA (2012) the club will have reduced economic and financial capacity and less discipline and rationality in their finances.

This set of criteria and ratios are presented in Table 2. They are weighted with their respective weights within each criterion (ω). It is also true that the total weight of the criteria $\sum_{i=1}^{m} \omega = 1$. The positive and negative symbols next to the code of each criterion indicate the best result; the highest (maximizers) and the lowest (minimizers) respectively.

Table 2: List of criteria of sustainability and economic and financial stability for professional European football clubs

CRITERION	CODE	RATIO	WEIGHT	CRITERION WEIGHT ω_i
PROFIT	NP/OP (+)	Net profit / Operating profit	0,030	0,15
PROFIT	OP/OR (+)	Operating profit / Operating revenues	0,060	
PROFIT	TOR/TA (+)	Total operating revenues / total assets	0,060	
STABILITY	STD/TL (-)	Short-Term Debt / Total liabilities	0,100	0,30
STABILITY	LTD/TL (-)	Long-Term Debt / Total liabilities	0,100	
STABILITY	WC/CA (+)	(Current Assets – Current liabilities) / Current Assets	0,100	
COVERAGE	E/TL (+)	Equity / Total liabilities	0,080	0,20
COVERAGE	NCA/TL (+)	Non-current assets / Total liabilities	0,080	
COVERAGE	TA/TD (+)	Total assets / (Current Debt + Non-Current Debt)	0,040	
LIQUIDITY	Quick Ratio (+)	(Current assets – Stocks) / Current liabilities	0,025	0,05
LIQUIDITY	CSTD/CL (+)	(Cash + short-term debtors) / Current liabilities	0,025	
SPENDING LEVEL	W/OR (-)	Wages / operating revenue	0,150	0,30
SPENDING LEVEL	W/TR (-)	Wages / Total Revenue	0,075	
SPENDING LEVEL	W/OE (-)	Wages / Operating Expenses	0,075	

Source: Self-elaboration from the table of variables developed by Ginevičius & Podviezko (2013), Table 2, page 294.

3.2. Methods to measure financial stability used

SAW

Lamelas (2009) states that in the method of Simple Additive Weighting (SAW) the researcher designates the weight for each criterion. The final result of the method is derived from the sum of the product of the relative weights for the value of each criterion.

$$S_j = \sum_{i=1}^{m} \omega_i r_{ij.} \quad (1)$$

As an advantage, Eastman (1997) and Podviezko (2011) explain that it is an easy method to use, hence its popularity. However, Lamelas (2009) criticizes their scarce theoretical foundations. In addition, Podviezko (2011) adds another limitation, because all values of the criteria must be positive.

COPRAS

The Proportional Simplex Assessment (Procurement) method was created by Zavadskas and Kaklauskas (1996). Ginevičius and Podviezko (2013) and Podviezko (2011) claim that this method can be applied to the evaluation of both maximizers and minimizers criteria without any prior processing as in the SAW method. Moreover, Podviezko (2011) indicates that it is a multi-criteria method widely used by authors from different disciplines.

TOPSIS

Ginevicius and Podviezko (2013) and Yue (2014) explain that an alternative is considered as the best solution when the distance with the best hypothetical solution V* is the shortest; while the distance from the worst hypothetical solution V- is the longest. Ginevičius and Podviezko (2013) add that this method does not require transformation of minimizers criteria in maximizers.

PROMETHEE II

Fernández (2011) explains that this method has a number of advantages over other methods of decision. It summarizes these advantages in:

- Ability to assess qualitative aspects of the alternatives through a proper function of preference.
- Simple and easy to understand for the decision maker.
- The information required to operate is limited to that of each alternative and the evaluation criteria considered, without additional parametric information.

Ginevicius and Podviezko (2013) indicate that PROMETHEE methods differ from other multi-criterion for the depth of the intrinsic logic. They also claim that integrate the values of the selected criteria and their weights, in a more sophisticated way by the use of preferred functions with few parameters. These preferred functions and their parameters are chosen by the person responsible for the evaluation.

Ginevicius and Podviezko (2013) argue that the transformation of minimizers criteria in maximizers is removed as well as the transformation of negative values into positive ones.

The PROMETHEE II method helps the decision-maker to finalize the decision-making process with the selection of the best solution, offering a clear view of relations between the alternatives (Fernández, 2002). Arévalo and Gutiérrez (2000) state that the PROMETHEE I method provides a partial preorder of the set of alternatives and PROMETHEE II method offers a total preorder. However, they explain that the information provided by the second may be more questionable

3.3. Remarks on the information employed

For this paper, a harmonized accounting framework has been established in order to compare the different items. This has been necessary because the selected sample include clubs from different countries with slightly different accounting rules. This happens even when they all try to implement the International Accounting Standards (IAS). The homogenizing process includes the following:

- The clubs in the English Premier League publish their financial statements in British Pounds. According to the prices recorded by Yahoo Finances (2014), conversions have been:

  £ / € at 06/30/2011 = 0.9007

  £ / € at 06/30/2012 = 0.8017

  £ / € at 06/30/2013 = 0.8543

- The difference between short- and long-term is not determined by a specific period. Less than or equal to one year is considered short term and more than one year long-term. For practical purposes, it can match the product life cycle that in football is the season. However, there are competitions that do not always coincide with the start-end of the domestic league.

- Short- and long-term debts are items used by selected ratios. The concept of debt establishes the following obligations: debts with credit institutions, financial creditors, leases and other financial liabilities. Debt accounts with group companies and associates are not considered. It means that only debts to unrelated third parties are included.

- Short-term debtors includes the following economic rights: debit balances with customers or other debtors, regardless of their relationship with the club.

- Basic capital consists of shares or similar securities, along with the premium if any, reserves and undistributed profits.

- The financial statements of Bayern Munich do not classify provisions in short- and long-term. This distinction is necessary for the allocation of non-current and current liabilities. In this case, provisions for "taxes" and "pensions" are considered long-term (by their nature); and "other provisions" are considered short term.

3.4. Sample

There are certain limitations in the access to the annual accounts of football clubs. First, due to the impossibility of finding the financial statements of Chelsea and Paris Saint-Germain, such clubs are discarded and replaced by Borussia Dortmund and Liverpool. The selection of the latest is based in that they are the two next clubs in the list of the ten largest clubs in Europe in terms of turnover, according to Deloitte (2014).

Second, not all had published the financial statements of fiscal year 2014. Therefore, the last three seasons released for the entire sample are taken (2010/11, 2011/12 and 2012/13).

4. Results

Under the above parameters, tables of financial ratios for fiscal years 2011, 2012 and 2013 are presented below.

The ratios presented in Tables 3, 4 and 5 show the financial position of the sample. However, reader cannot have a generalized view of all the criteria selected exclusively through the ratios. Therefore, to establish a ranking of clubs based on sustainability and economic and financial stability the MCDA analysis has been carried out.

Table 3: Financial ratios of the largest European professional football clubs, depending on their turnover % (2011)

2011	REAL MADRID	FC BARCELONA	BAYERN MUNICH	MAN. UNITED	MAN. CITY	ARSENAL	JUVENTUS	AC MILAN	BORUSSIA DORTMUND	LIVERPOOL
NP/OP (+)	67,96%	-1175,54%	12,63%	20,54%	-101,31%	57,67%	-103,54%	-90,69%	36,22%	-106,53%
OP/OR (+)	10,38%	0,19%	3,24%	19,08%	-127,25%	8,52%	-56,97%	-33,34%	9,84%	-25,26%
TOR/TA (+)	53,31%	88,46%	63,33%	33,02%	29,51%	36,15%	51,51%	62,98%	70,26%	67,03%
STD/TL (-)	11,66%	9,69%	0,87%	2,08%	7,39%	2,73%	26,96%	72,91%	6,19%	25,49%
LTD/TL (-)	25,92%	21,58%	22,84%	48,83%	13,67%	25,03%	18,37%	13,43%	25,86%	7,79%
WC/CA (+)	-69,32%	-123,28%	19,69%	-21,97%	-122,52%	39,75%	-260,60%	-199,19%	-152,35%	-167,90%

E/TL (+)	29,69%	-13,48%	46,04%	21,67%	52,52%	37,57%	-1,48%	-21,19%	30,50%	16,71%
NCA/TL (+)	75,73%	63,96%	63,60%	79,74%	85,88%	68,53%	78,97%	64,34%	88,68%	74,73%
TA/TD (+)	142,23%	88,12%	185,31%	127,66%	210,63%	160,18%	98,54%	82,51%	143,88%	120,06%
Quick Ratio (+)	58,61%	44,79%	119,90%	81,99%	44,94%	140,40%	27,73%	33,42%	35,95%	32,43%
CSTD/CL (+)	57,98%	44,39%	113,54%	81,99%	44,94%	138,76%	22,11%	16,72%	32,66%	29,60%
W/OR (-)	48,51%	57,69%	50,12%	46,14%	113,57%	48,38%	86,33%	92,72%	40,63%	70,17%
W/TR (-)	48,06%	53,40%	47,99%	45,52%	113,57%	48,25%	81,16%	90,14%	39,50%	70,15%
W/OE (-)	53,57%	53,49%	49,52%	56,08%	49,98%	52,73%	52,85%	68,07%	43,68%	56,01%

Table 4: Financial ratios of the largest European professional football clubs, depending on their turnover % (2012)

2012	**REAL MADRID**	**FC BARCELONA**	**BAYERN MUNICH**	**MAN. UNITED**	**MAN. CITY**	**ARSENAL**	**JUVENTUS**	**AC MILAN**	**BORUSSIA DORTMUND**	**LIVERPOOL**
NP/OP (+)	55,14%	90,79%	59,12%	51,95%	-94,01%	-181,29%	-118,13%	-58,77%	66,51%	-109,96%
OP/OR (+)	8,58%	12,23%	5,27%	14,01%	-45,03%	-6,73%	-21,20%	-10,74%	19,23%	-21,81%
TOR/TA (+)	59,25%	107,03%	73,32%	34,84%	44,73%	32,06%	49,98%	49,67%	89,61%	75,33%
STD/TL (-)	13,45%	11,87%	0,89%	1,77%	9,33%	4,42%	24,91%	37,52%	2,92%	0,89%
LTD/TL (-)	18,11%	25,90%	22,37%	47,47%	12,62%	22,39%	15,85%	7,65%	25,96%	32,65%
WC/CA (+)	-49,83%	-211,85%	16,85%	-54,74%	-41,54%	40,44%	-188,95%	-162,17%	-61,73%	-91,54%
E/TL (+)	31,82%	-4,42%	48,85%	24,82%	59,84%	38,86%	15,10%	6,73%	37,58%	2,34%
NCA/TL (+)	71,54%	77,49%	69,62%	84,35%	81,82%	67,29%	82,69%	76,86%	84,60%	73,67%
TA/TD (+)	146,67%	95,76%	195,49%	133,02%	249,03%	163,57%	117,79%	107,22%	160,20%	102,40%
Quick Ratio (+)	66,44%	32,07%	113,81%	64,62%	70,65%	141,58%	34,61%	38,14%	52,46%	47,27%
CSTD/CL (+)	54,55%	31,61%	109,04%	63,11%	67,29%	138,09%	27,91%	26,28%	48,11%	35,26%
W/OR (-)	45,69%	53,12%	47,12%	50,48%	87,30%	59,14%	77,25%	74,56%	37,13%	64,63%
W/TR (-)	45,65%	48,30%	44,76%	48,99%	82,72%	58,44%	70,21%	72,49%	35,86%	64,62%
W/OE (-)	49,93%	54,35%	47,12%	56,70%	57,98%	54,79%	58,87%	65,63%	44,04%	53,05%

Source: self-elaboration

Table 5: Financial ratios of the largest European professional football clubs, depending on their turnover % (2013)

2013	REAL MADRID	FC BARCELONA	BAYERN MUNICH	MAN. UNITED	MAN. CITY	ARSENAL	JUVENTUS	AC MILAN	BORUSSIA DORTMUND	LIVERPOOL
NP/OP (+)	66,30%	67,74%	62,23%	236,11%	-101,97%	-20,53%	-418,05%	-63,54%	78,62%	-109,94%
OP/OR (+)	10,69%	10,76%	5,33%	17,07%	18,68%	-10,06%	-1,43%	-12,35%	21,35%	-22,00%
TOR/TA (+)	63,47%	95,91%	80,83%	33,30%	49,12%	35,87%	64,01%	56,50%	101,79%	89,50%
STD/TL (-)	13,43%	10,46%	0,84%	1,13%	10,67%	3,80%	34,20%	42,81%	1,94%	8,68%
LTD/TL (-)	10,45%	12,56%	20,44%	35,41%	10,37%	20,95%	14,57%	7,90%	20,85%	22,19%
WC/CA (+)	-41,74%	-172,58%	11,70%	-45,67%	27,81%	42,03%	-153,85%	-153,88%	17,50%	-230,62%
E/TL (+)	36,59%	2,47%	48,05%	40,06%	67,07%	38,48%	10,97%	2,70%	46,50%	-19,36%
NCA/TL (+)	72,02%	71,02%	70,09%	85,40%	68,76%	66,34%	77,36%	75,12%	70,17%	76,15%
TA/TD (+)	157,70%	102,53%	192,51%	166,82%	303,70%	162,54%	112,32%	102,78%	186,91%	83,78%
Quick Ratio (+)	69,95%	36,69%	104,88%	68,65%	138,52%	162,68%	39,39%	39,39%	111,07%	25,83%
CSTD/CL (+)	59,53%	36,39%	95,06%	68,54%	116,41%	157,29%	30,08%	25,25%	105,44%	14,37%
W/OR (-)	47,23%	53,35%	48,36%	49,70%	86,02%	54,94%	61,56%	50,09%	34,82%	63,48%
W/TR (-)	45,46%	49,28%	47,23%	48,48%	73,14%	54,63%	57,60%	48,69%	34,51%	63,47%
W/OE (-)	50,68%	54,72%	49,82%	58,17%	86,95%	49,67%	56,84%	43,47%	43,76%	52,03%

Following the four methods discussed above MCDA has obtained the level of financial stability and sustainability of clubs. The results and ratings of each method, in each of the fiscal years are shown below. In Tables 6, 7 and 8, the results of the application of multi-criteria methods on the 14 financial ratios of the clubs in the sample for each of the fiscal years are shown. Table 9 introduces the ranking for the selected set of multi-criteria methods for the whole period.

Table 6: Classification of Club-sample according multi-criteria methods for financial year 2011

2011 METHOD	REAL MADRID	FC BARCELONA	BAYERN MUNICH	MAN. UNITED	MAN. CITY	ARSENAL	JUVENTUS	AC MILAN	BORUSSIA DORTMUND	LIVERPOOL
SAW Sj	5	8	1	3	7	2	9	10	4	6
COPRAS Zj	6	10	2	4	1	3	9	5	8	7
TOPSIS Ri	5	10	2	3	7	1	9	4	6	8
PROMETHEE Qi	3	6	1	5	8	2	9	10	4	7
Cumulative classification	19	34	6	15	23	8	36	29	22	28
Classification 2011	4	9	1	3	6	2	10	8	5	7

Table 7: Classification of Club-sample according multi-criteria methods for financial year 2012

2012 METHOD	REAL MADRID	FC BARCELONA	BAYERN MUNICH	MAN. UNITED	MAN. CITY	ARSENAL	JUVENTUS	AC MILAN	BORUSSIA DORTMUND	LIVERPOOL
SAW Sj	5	8	1	4	3	2	9	7	6	10
COPRAS Zj	3	8	1	4	6	5	10	9	2	7
TOPSIS Ri	4	9	1	2	5	3	8	7	6	10
PROMETHEE Qi	3	7	2	6	5	4	9	10	1	8
Cumulative classification	15	32	5	16	19	14	36	33	15	35
Classification 2012	3_4	7	1	5	6	2	10	8	3_4	9

Table 8: Classification of Club-sample according multi-criteria methods for financial year 2013

2013 METHOD	REAL MADRID	FC BARCELONA	BAYERN MUNICH	MAN. UNITED	MAN. CITY	ARSENAL	JUVENTUS	AC MILAN	BORUSSIA DORTMUND	LIVERPOOL
SAW Sj	6	7	2	4	3	5	9	8	1	10
COPRAS Zj	6	8	3	2	1	5	7	9	4	10
TOPSIS Ri	6	9	4	2	1	5	7	8	3	10
PROMETHEE Qi	2	7	3	4	6	5	8	9	1	10
Cumulative classification	20	31	12	12	11	20	31	34	9	40
Classification 2013	5_6	7_8	3_4	3_4	2	5_6	7_8	9	1	10

Table 9: Classification of Club-sample according multi-criteria methods for fiscal years 2011, 2012 and 2013

RANKING ´11, ´12 y ´13	REAL MADRID	FC BARCELONA	BAYERN MUNICH	MAN. UNITED	MAN. CITY	ARSENAL	JUVENTUS	AC MILAN	BORUSSIA DORTMUND	LIVERPOOL
	6	8	1	3	5	2	9-10	7	4	9-10

The application of multi-criteria methods to the selected clubs, for fiscal years 2011, 2012 and 2013, shows consistent results. Arsenal, Bayern Munich, Borussia Dortmund, Manchester City, Manchester United and Real Madrid compete for the first six positions in all seasons analyzed. However, based on the ratios employed and in the financial statements, Borussia Dortmund and Manchester City have suffered a strong process of cleaning up in their accounts. They go from the position 5th and 6th in fiscal 2011 to 1st and 2nd in 2013, respectively. Moreover, AC Milan, FC Barcelona, Juventus and Liverpool are positioned as the last positions in the seasons studied.

5. Discussion

The application of criteria and set of ratios to the financial statements of the sample has allowed analyzing the financial performance of the clubs. However, in search for a more objective study, they have been applied four methods of analysis: SAW, COPRAS,

TOPSIS and PROMETHEE II, following the methodology of Ginevičius and Podviezko (2013). These researchers claim that there is no better MCDA method, which has used the results of all the methods used in order to obtain a single classification to ensure the accuracy of the study.

As shown in the above tables, the financial situation of clubs has improved slightly. The biggest change is recorded in 2011/12 fiscal year in which enters into force the 2012 edition of the Financial Fair Play Regulations (2012). In line with this statement, UEFA (2013) reports that a slight decrease in salary expense occurs together with an increase in operating income since the entry into force of this European regulation. It also states that, since the fiscal year 2011/12, total losses of European first division clubs are reduced by more than 600 million euros. This figure represents a decrease of total losses of 36% in a single season.

Storm and Nielsen (2012) indicate that there is inconsistency between the worrying financial situation and the level of survival of the clubs that has its origin in flexibility of applicable law. For their analysis, they introduced for the first time in the study of football industry, the theory of budgetary constraints developed by Kornai (1979). It states that budgetary constraints may be strong or soft. On one hand, the strong constrains are based on the free market model where state intervention to correct the market is not necessary. Moreover, the soft constrains are based on economic models with a high level of market intervention. They believe that such flexibility is necessary to correct the defects of the free market. Barajas and Rodríguez (2014), Boscá et al. (2008), Franck (2010) and Morrow (2013) argue that the flexibility in the regulation of soccer is palpable and regulatory contexts are very close to the soft budget constraints.

Storm and Nielsen (2012) and Vöpel (2013) argue that the financial control mechanism of UEFA (2012) has sufficient capacity to achieve their objectives. However, the regulatory flexibility close to the soft budget constraints makes it lose its strength to achieve them. This flexibility is revealed in Article 61 (acceptable deviation for the monitoring period Break-even) and Article 63 (permissiveness of the failure of 1 of the 4 indicators of financial balance). However, it has been shown that, at first, the solution employed by UEFA has been successful in the financial control of the main clubs.

The winners and runner-ups of the UEFA Champions League in 2010-11, 2011-12 and 2012-13 seasons have been Barcelona and Manchester United, Chelsea and Bayern München and Bayern Munich and Borussia Dortmund, respectively. It is noted that the victorious years of Spanish and German teams coincided with the worst economic and financial seasons for such clubs. However, there has been an inverse financial behavior among the runner-ups since Manchester United, Bayern Munich and Borussia Dortmund had their best financial years in the seasons that were runners-up. The methodology does not allow infer causality between financial and athletic performance. However, new research may provide further considerations on the topic.

The financial improvement of Manchester City at the end of the 2013 season has been demonstrated. However, some considerations are necessary. The financial injection provided by a Sugar Daddy in the club is notorious. The last title of the club in the

English Premier League was in season 1967-68 and the first team alternated between the three divisions of English football over the past two decades. However, after the purchase of the club by a wealthy man, Manchester City has won two titles in the league in recent seasons (2011-12 and 2013-14). If economic improvement is evidenced by the analysis - such as increased operating income and lower wages in respect of sports personnel and debts - on the other hand the influence of the Sugar Daddy is evident in other areas, as the owner has personally invested millions of euros in restructuring the club. Therefore, once again the need for common rules is demonstrated to all clubs for keeping the financial and competitive balance at continental level.

The results obtained in this article denote a stable industry, with progressive changes in stability and sustainability. AC Milan, FC Barcelona, Juventus and Liverpool require further consolidation in its financial statements. Stakeholders of this sector can use the tool presented in this paper with economic and financial consistency, being flexible and easy to use for making investment decisions in this industry.

6. Conclusions

At the end of this research, we conclude that the ten clubs with higher revenues in Europe have presented positive and progressive changes regarding economic and financial stability and sustainability between the 2010-11 and 2012-13 seasons.

The results are consistent and corroborate with the proposal of the Financial Fair Play Regulations by UEFA, because it has shown slight decrease in salary expense and reduction in losses.

It is assumed that the method is suitable for this type of analysis in the football industry, being a consistent and easy to use that technique for decision-making investors and other market stakeholders.

Finally, new research examining the economic scenario of European football is stimulated by analyzing the financial statements of a greater number of clubs and even in separate leagues.

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