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Academy of Physical Education and Sport in Gdańsk

Department of Social Sciences

REVIEW

doctoral dissertation of the master of Stamatiki-Maria Atsave

The impact of the 2008 financial crisis on Greek football clubs.

Focus on ticket revenue

prepared at the University of Gdańsk in the field of social sciences

in the scientific discipline of economics and finance

under the scientific supervision of Prof. Jacek Zaucha

Field of study: Social sciences, Scientific discipline: Economics and finance

1. Formal basis for the review

The basis for the review is a letter from the Chairman of the Discipline Council of Economics and Finance, Prof. Przemysław Borkowski, PhD, of the University of Gdańsk in connection with the resolution of the Discipline Council of Economics and Finance of the University of Gdańsk of 15/06/2023 appointing me as the reviewer of the doctoral dissertation of Stamatiki Maria Atsave, MSc. " The impact of the 2008 financial crisis on Greek football clubs. Focus on revenues from tickets sale" prepared under the supervision of Prof. Jacek Zauch, assistant supervisor dr Jakub Kwiatkowski

2. Preliminary remarks

Undoubtedly, football enjoys the most popularity among all sports in the world, it is estimated that more than 4 billion fans actively play and watch the game in all ages, genders and nationalities. The game is widely followed in every corner of this planet. Nowadays, football is a global curiosity, because it is a special invention of people and in itself does not create any civilizational values, generating benefits primarily in the spectacular aspect, it performs functions especially psychedelic and entertainment. The social value of football also catalyzes the widespread physical activity of young people.

Football is hugely popular in Europe, with 131 million fans in Europe's five largest football markets (Spain, Italy, Germany, the United Kingdom and France) alone. Very quickly, the game of football

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became the subject of gambling and later gradually developing business. In the third decade of the twenty-first century, no other economic industry produces such fanatical and loyal buyers of the product as football. At the same time, on a local and global scale, the importance of football is very small. Its role in national social and international politics is much greater.

Economic crises have an impact on sport, including football, the most popular sport in Europe. When the economic crisis in Greece became a reality in 2008, the financial catastrophe in Greek football was compounded by pathologies that had been incubated for years: extravagance of club management, poor management in clubs, helplessness against hooligans, match-fixing, permission to circumvent the rules. Football clubs were in crisis, stands were emptying, stadiums were destroyed, sponsors were leaving... The problem of the impact of the financial crisis in Greece on the country's football is therefore a very interesting issue and, from the point of view of sports economics, it is worth analysing and showing the mechanisms and mutual correlations.

However, at the beginning it should be noted that the work concerns the financial crisis initiated in 2008, i.e. 15 years ago, and at the current pace of civilizational changes, it seems to be a very large time space. The author writes in the introduction, p. 15, that: 'In this light, the study aims to establish whether the economic crisis experienced by Greece between 2008 and 2015 has affected the financial situation of professional football clubs, namely their revenues and the number of spectators.'

It should be understood that the research concerns the years 2008-2016, so it is retrospective. Therefore, it can be assumed that many aspects discussed in the work are of a historical and economic nature. Probably the economic conditions of that period have ceased to work, and this situation will never be repeated in such specific conditions, hence the reception of work to the present and the future seems limited. Although the history of crises and events in sports economics connects the past with the present and even the future, because on the basis of past events it is possible to explain many socio-economic phenomena taking place today, or to predict some upcoming events and apply appropriate corrective actions. However, it is certain that each crisis is of a different nature and does not coincide with the causes and course of other crises, which limits the possibility of adequate preparation before its arrival.

Thus, the reviewed work can be considered as an example of retrospective research, because the study concerns events that occurred in the past and is based on sources (documents) from the past. Also, interviews with journalists can be treated and have mainly historical value, taking into account the timeline that concerns memories. The activities undertaken in the study should therefore be aimed first at examining the course and consequences and impact of the crisis on the state of football economics in Greece at that time, and only secondly as a prospective study relating to future actions.

The issue of financial crises is one of the most important topics of modern finance. Issues related to crises require extensive knowledge of both finance, including primarily banking, as well as understanding of the principles of functioning, specificity and assessment of the financial condition of

entities such as enterprises, in the subject of work football club organizations. Crises are the result of cyclical fluctuations in the economy and the financial system, so it would be naïve to assume that they will not happen again. However, in a further review of the work, it will turn out whether the author really deals with the financial crisis and its connotations with the football business.

Stamatiki-Maria Atsave chose as the subject of her doctoral dissertation an extremely topical, highly complex and still quite poorly researched issue. Assess the relationship between the impact of the 2008 financial crisis on Greek football clubs, with particular emphasis on ticket revenues. It should be emphasized that the subject chosen by Mgister Stamatiki-Maria Atsave fits very well into the research problem of the doctoral dissertation in economics and finance and at the same time is very interesting and meets the expectations of many specialists in economics and finance interested in the economics of sport, especially business issues in football, as well as a large group of sports managers and people managing organizational and business structures in football. The author argues that the questions presented in this study were taken up because Greek football clubs did not carry out any specialised post-crisis economic studies on their performance during this period and could help them mitigate the negative effects of the crisis. In addition, the impact of the crisis on Greek football clubs has not yet been examined, as has the impact of the crisis on stadium attendance.

Certainly, such studies present a significant opportunity to contribute to the economics of football clubs, especially their finances, since the results obtained could influence the future decisions of football club managers, making it possible to avoid large changes in the trend of financial results and the potential associated risks. The results of the study could also be helpful in alerting football clubs to the risks and help to avoid huge losses resulting from a decline in the financial performance of the club. Further research in this area could include financial performance models.

A general view of the work already reveals some shortcomings and shortcomings. For example, one should pay attention to marketing issues and building the loyalty of the club with fans, which is of great importance in the purchase of loyalty tickets!, it would also be necessary to pay more attention to the involvement of fans and its level, which the author does not undertake. There should also be more about the pricing strategy - combined products. The subscription model was also not mentioned. A more analytical approach to the sports product would be needed, and attention would be paid to a few additional unique features: in particular, that it is variable and subjective, which means that every sporting spectacle, although repeated regularly, is associated with different emotions for consumers. Each of them can be assessed differently by them, hence satisfying the sports consumer is a very difficult task. Or maybe it should be written more that a football match as a sports product that is usually consumed in public, and the buyer also achieves satisfaction through social contact. Only 2% of participants go alone to watch sports events. This factor is impossible to predict and control in contrast to the weather, the reaction of the fans and, above all, the result of the game. All these factors affect consumer satisfaction and affect the demand for the product.

The role of football stars should also be emphasised. When, before the crisis, when Greek clubs had better financial performance, the names of recognizable players in Europe appeared in clubs (Yorgos Karagunis (1995-2014), Rivaldo Vítor Borba Ferreira (2004-2008), (Emmanuel Olisadebe 2005-2012), (Raul Bravo 2007-2011) it certainly built more interest, it should be remembered that it is difficult to create stars from your own national league.

It is also necessary to remember and take into account other factors in the analysis, such as: growing competition on the entertainment services market – which at the same time could have had an impact on attendance, growing awareness of fans regarding security at the stadium – still negative image of hooligan groups in Greece. Greece has never been the organizer of a large football event like Poland, it would give an additional impulse to development. Although the organization of the Olympic football tournament in 2004 contributed to the modernization of stadiums (Olympiakó Stádio, Stádio Geórgios Karaïskákis, Ethnikó Kaftanzógleio Stádio), the Olympic team of Greek footballers was not successful.

It is a pity that the author did not mention the hopes of the Greeks that the organization of the Olympic Games in Athens in 2004 will stimulate industry, services, especially the tourism industry through the implementation of large infrastructure projects and unemployed Greeks will gain well-paid jobs. It was supposed to be a new era of growth and economic stability in Greece. A huge sum of $15 billion was allocated to the organization at that time, and a significant part of the budget ($6.2 billion) was covered by Greek taxpayers. According to calculations made by Stephen Wenn, a professor of sports history at Wilfrid Laurier University, the budget hole resulting from the overinvested Olympic Games in Athens could reach up to 15 billion dollars. The finale was that financially this sporting event was a complete disaster and one of the main factors that brought Greece to the brink of bankruptcy.

When writing about the crisis in Greek football, one should also mention the potential of the Greek national team in football. Paradoxically, during the crisis, the Greek national football team was the most successful. After the success of winning the European Championship in 2004, in 2008 they were promoted by being eliminated in the group stage, but already in 2012 they reached the quarter-finals. Since then, they have not qualified for the European Championship tournament. In 2010, Greek players qualified for the final tournament of the World Cup, being eliminated from the competition in the group stage, and during the next World Cup in 2014 they reached the 1/8 finals. Maybe it would be good to pay attention to this aspect, to discuss the economic and financial crisis itself?

3. Assessment of the correctness of the structure of the dissertation and its substantive content

The substantive part of the reviewed doctoral dissertation consists of 158 pages, including the bibliography and relevant lists and appendices of 212 pages. It is an adequate study in terms of volume, in relation to the importance of the presented research problem. More important than the volume is the structure and substantive content of the chapters.

The structure of the work in the reviewer's opinion does not raise any major objections. The first chapter of the paper describes the sports industry and the justifications why the sports industry should

be considered as a separate economic entity. The chapter contains content on the structure of the sports industry, market segmentation, business relations between entities on the sports market as well as the impact of the external environment on this industry. The chapter also examines what sports production means and how those who distribute it and those who support it through the provision of financial or real services (i.e. sponsors) relate to it. The chapter is compilational. It is well prepared, contains a lot of interesting cognitive information about the economics of sport.

The second chapter examines business in football, describing the initial stages of professional football, the internationalization of post-war football and television broadcasting, and the concept of efficiency in professional football clubs that have shaped the current professional football market. The historical content of subsections 2.1 and 2.2 (pp. 39-44) contained in this chapter is, in my view, completely superfluous.

In the third chapter, the author analyzes the factors shaping the development of the football business and focusing on the factors important for Greek football. It draws attention to the institutional environment, including the main principles, structures and guidelines of institutional economics, as well as the problem of political uncertainty as an important macroeconomic determinant. This is the next compilation chapter. The most important subsection 3.5 from the point of view of the subject of the work (pp. 68-72) concerning tickets sold by Greek football clubs, as the author put it, "in retrospect" is probably a misunderstanding, because it does not contain any relevant content. Without any relevant data of own research.

The fourth chapter contains content on the Greek economic crisis, its causes and consequences. The text contained therein is hardly related to the main topic of the thesis and actually largely superfluous, especially as the author does not even attempt any application to the economics of sport during the crisis. This may be understandable because she does not have, nor has she obtained source material in this area.

Chapter 5 entitled "Mechanisms influencing the economic performance of the football industry during the crisis" consists of 5 subchapters. It is actually the main substantive chapter of the work, the results of the research are presented, including the sample of the econometric model and the results of the research. In the end, conclusions from the completed and developed research were proposed. The most important subsection of this corresponding to the research problem is subchapter 4 entitled Attendance at the stadium is bizarre because it completely lacks quantification, there is nothing!, no features that have been counted and measured. There are only survey results and theoretical arguments, and that's actually nothing! Even the timeline on which the attendance would be placed is unknown (2008 or 2016?). In chapter 5, subchapter 3, the author writes (p.119):

The data includes 11 football clubs from four years. This exact number of clubs is justified by the fact that these are clubs that have played in the Champions League during these four years. The number of years represents a period of economic crisis. It should be noted that the analyzed regularity applies

only to the time of crisis. We cannot say anything about this pattern during the period without a crisis, because there was no access to adequate statistical data for that period."

So where can we conclude that there was any crisis in 2008 and in the following years in Greek football, and was this not a normal situation for Greece?

Statistical calculations are exaggerated, because the collected data would be enough to calculate in Excel because what could be a cognitive element from the survey, the number of variables and possible correlations is very limited.

On page 120, the author writes that: "The size of the city has a significant negative correlation with total assets and total liabilities, which proves that the clubs of the two larger cities in Greece have greater economic capacity, while clubs from small towns struggle for survival. Although the correlation coefficient between these variables is very high, the analysis includes the size of the city, because there is no correlation between this variable and the logarithm of revenues to fixed assets and the logarithm of GDP."

As it seems, the assumption that the size of the city determines is also wrong because exactly these clubs popular in Greece simply have a network of supporters not only from that city, one should stop at the role and power of the club's brand. In every European league there are 3-4 top brands that stand out from the rest, but often in smaller centres there are no other attractions and it doesn't mean that the spectator-attendance potential is lower. An interesting example is Hoffenheim in the Bundesliga a club theoretically from a village with a full stadium.

4. Formal and substantive assessment of work

The content of the thesis can, with considerable reservation, be considered consistent with the thesis title 'The impact of the 2008 financial crisis on Greek football clubs. Focusing on ticket sales revenue'. However, from the point of view of a social research methodologist, I note that it would have been better if the title had been as follows: "The impact of the economic crisis of 2008 and its immediate consequences until 2016 in the light of a survey and reports by sports journalists". "The impact of the economic crisis of 2008 and its direct consequences until 2016 in the light of the survey and reports of sports journalists".

In the key fragment of the work "Tickets sold by the Greek football clubs in the retrospects" 71, the author writes about ticket sales in football clubs in the years 1992-1993, 2004-2008, 2015. We won't really learn anything from the section on ticket sales!! And what we will find out is the information quoted from Sportsman (2013). Super League tickets. Retrieved from https://www.sportman.gr/analysis/superleague-ta-isitiria-tou-protathlimatos-2013-2014 (in Greek). [accessed April 24, 2021].

In the introduction, the author writes, p. 15: In this light, the study aims to determine whether the economic crisis experienced by Greece between 2008 and 2015 has affected the financial situation of

professional football clubs, namely their revenues and the number of spectators. So what exactly is the period analyzed?

The purposefulness and pragmatic significance of the research undertaken and the preparation of the dissertation are convincingly stated, and there is, as the author states, no specialized post-crisis economic research made by the clubs (the impact of the crisis on Greek football clubs, especially on attendance at the stadium) that could help them mitigate the negative effects of subsequent crises. It should be noted, however, that it is not only the clubs that should make such expertise, but above all the environment of researchers dealing with economics and marketing in sport. Football clubs should be prepared to cope with macroeconomic crises, and works such as the one submitted for review could influence the development and implementation by professional football clubs of an effective marketing strategy during a difficult economic period. The stated aim of the study is to determine whether the economic crisis experienced by Greece between 2008 and 2015 has affected the financial situation of professional football clubs, namely their revenues and the number of spectators. But another issue is important, given the poor management of Greek clubs (problems with payments on time) for many years before the crisis, it is difficult to say unequivocally that this is a crisis. Greek clubs have been known for years for their extravagance, there was no financial fair play at that time, they often turned out to be insolvent. Is the crisis of 2008 an emergency?

The author also does not specify the other terms used, or specifies them too late, using them earlier. He therefore commits the logical fallacy ignotum per ignotum. This situation may also result from semantic, linguistic and terminological problems, because the original work was probably prepared in Greek and then translated into English.

Is it not by chance that we are confusing the economic crisis with the financial crisis, because it seems that there was no economic crisis in 2008, it was the beginning of the financial crisis in the world, including in Greece? It would be good for the author to clearly indicate what the financial crisis is and what is the economic (economic) crisis. It should be noted that a financial crisis is a situation in which there are serious disturbances in the financial market. They manifest themselves in a significant fall in asset prices and the bankruptcy of many financial and non-financial institutions. An economic crisis is a rapid collapse of the economy on a global scale, when most developed and developing countries are affected by the crisis. It is felt on a global scale by inhibiting investment, limiting access to credit, declaring companies bankrupt, increasing unemployment, destroying part of the banking sector, etc. Thus, there is an unacceptable situation in scientific work when two terms "financial crisis and economic crisis are used arbitrarily". The term "financial crisis" is used 22 times at work and the term "economic crisis" 64 times, including 58 in substantive text. The author asks about the financial crisis of respondents in the survey (4 questions 11,12,13,19) and in interviews asks journalists about the economic crisis (pp. 195,196, 200, 202), which is an obvious methodological error. The author often uses the term "sports industry" as many as 75 times, and only 1 time the term sports business (the other two are the term in the titles of publications). It is a pity that there is little about managerism in football

and this term appears only 9 times (the other two are a term in the titles of publications). It may be surprising that the term sports marketing appears only once, the more that looking at the title and content of the work it should have more marketing content.

5. Evaluation of the analysis of the state of research and literature of the research problem

In the dissertation, the author collected and used extensive scientific literature, there are also, although few, source materials and statistical data on the financial situation in Greek professional clubs. However, they do not fully correspond to the adopted basic goal of the work and partial goals, which in effect limited the possibilities of conducting an analysis of the state of research and presenting broader analyses of an interdisciplinary nature and greater internationalization of research.

Autorka właściwie nie dokonuje kompletnego dokładnego przeglądu literatury tematu, co ma później konsekwencje w braku odniesienia do kilku istotnych pozycji. Szkoda, że nie sporządziła bibliometrii w wykorzystaniem dostępnych naukowa baza danych (Google Scholar, EBSCO, Web of Science, Scopus) czy bardziej wnikliwe przeszukiwanie z autopsji. Może wówczas dotarłaby do następujących pozycji o kryzysie finansowym w europejskiej piłce nożnej: (Lago, U., Simmons, R. and Szymaski, S. (2006). The financial crisis in Euro- pean football. Journal of Sports Economics, 7, 1, 3-12; Frick, B. (2010). The Financial Crisis in European Football: Proceedings of the Conference on Football and Finance. International Journal of Sport Finance, 5, 27; Frick, B. and Prinz, J. (2006). Crisis? What crisis? Football in Germany. Jour- nal of Sports Economics 7, 1, 60-75; Kesenne, S. (2010). The Financial Situation of the Football Clubs in the Belgian Jupiler League: Are Players Overpaid in a Win-Maximization League? International Journal of Sport Finance, 5, 67-71; Szymanski, S. (2010). The Financial Crisis and English Football: The Dog That Will Not Bark. International Journal of Sport Finance, 5, 28-40; Barajas, A. & Rodríguez, P. (2010). Spanish Football Clubs' Finances: Crisis and Player Salaries. International Journal of Sport Finance, 5, 52-66).

These publications would also provide a very good basis for internationalization of the problem and comparative studies of the crisis in English, French, Spanish and German football.

There is an interesting paper in the literature based on a novel methodology., the publication of David Alaminos and Ignacio Esteban and Manuel A. Fernández-Gámez entitled Financial Performance Analysis in European Football Club Entropy, 22(9), pp.1–16. The authors have developed a new model for the analysis of financial results of football clubs. Using data from the 2016-2018 period and using two different neural network methods to create an analysis model. In order to obtain a robust model, such as the Multilayer Perceptron (MLP - the most common type of artificial neural networks) and quantum neural network. This work creates a new model of financial performance analysis for football clubs, and is an attempt to respond to the growing need to analyze and predict the financial situation in the management of football clubs. Thanks to this methodology, the results and subsequent conclusions from the analyses can be very useful for football club organizations. It can also have big implications

for football managers and executives to gain information for a more accurate analysis of financial performance in the football business.

It is a pity that the author, writing a thesis at the University of Gdańsk in Gdańsk (POLSKA!!), completely ignores the literature of Polish researchers. So one wonders why this work is proceeding before the Polish university scientific council? It is good that she took into account the publication of her promoter at least once.

6. Evaluation of working methodology

There are two threads in the dissertation: theoretical and empirical. The author presents a theoretical analysis of three channels affecting the Greek economy.

The first is related to the decline in the income of the Greek society due to the increase in the unemployment rate, the increase in the level of taxation and cuts in pension systems and social benefits. The second channel related to social factors such as the increase in violence, the level of disappointment and social unrest. The third is associated with external factors. He declares that, of the three channels, two will be examined more closely The main reason is to focus on a thesis related to ticket revenues, namely the direct economic relationship between clubs and spectators. According to the author, the third factor is very complex, and therefore more difficult for quantitative economic research. He also writes that in-depth interviews with experts partially underscore this complexity. On page 99. The author writes that the problem is that the impact of changes in the broad external environment on the financial situation of Greek clubs should be diminished by many factors that can only be properly revealed in multidisciplinary studies combining knowledge in the field of economics, sociology, political and legal sciences. Its correct application would require the use of expert knowledge that was not available to the author of the work during its development. On page 99. the author writes: "The problem is that the impact of the changes of the broad external environment on the financial situation of the Greek clubs is mitigated by many factors that can be only properly revealed in multi-discipline studies combing knowledge of economics, sociology, political and legal science. Its proper application would require use of the expert knowledge that was not available to the author of the thesis during its compilation". Later, he presents an algorithm of channels for the impact of the crisis on the financial situation of Greek football clubs. The declaration by the author preparing her doctoral dissertation that she lacks expertise in the subject matter may be incomprehensible.

The author writes that the methodology of the paper is based on an econometric analysis on the impact of GDP changes on football club revenues. In the econometric analysis, the author intended to study Greek football data on club revenues and spectator numbers in order to determine the impact of changes in GDP and unemployment levels on these parameters. The term econometrics appears 8 times. The author introduces the term econometrics already to describe the research method – writing about econometric analysis: in Executive summary p. 8: " The research conducted an econometric analysis regarding the effect of GDP changes on the revenues of football clubs, where it was found that when

GDP drops by 1%, the revenues decrease by 3,83%." and in the sentence "Econometric analysis, which consists of examining Greek football data on club revenues and the number of spectators, in order to determine the impact of changes in GDP and unemployment on these parameters." p. 117. But he does not write how he will use this method and on what output parameters.

In the fifth chapter, he writes that it presents the results of the research, i.e. econometric model and primary test results. He also writes about the econometric model in the following passage: p. 110: " The analysis shows that there is a rather strong and significant (V=0.663, p=0.000<0.05) relationship between age and occupation (Table 11). This can be explained due to the fact that all unemployed participants are below 30 years old, and all retirees are over 65 years old. Therefore, these two variables should not be used together in the explanatory econometric models."

p. 115 "The correlation between the change in income and the change in employment status should be highlighted. As shown in Table 29, the change in employment status has a fairly strong and statistically significant (V=0.532, p=0.00<0.05) correlation with the change in income. change in income. Therefore, these two variables should not be used together in econometric models"; p. 115. What should be highlighted is the correlation between the change of income and the change of employment status. As presented in Table 29, the change of employment status has had a rather strong and statistically significant (V=0,532, p=0.00<0.05) correlation with the change of income. Thus, these two variables should not be used together in the explanatory econometric models.

The fifth chapter presents the results of the research, i.e. the econometric model and the results of the primary research, the econometric model, p. 18. But where is this econometric model? If we assume that the econometric model is a formal construction which, by means of a certain equation or system of equations, presents the basic relationships between the considered economic phenomena, it is doubtful whether such a model has been constructed and presented?

The main part of the work was to be the material contained in chapter 5 subchapter 3. However, this chapter entitled "Performance of Greek clubs during the crisis (macroeconomic perspectives)" is completely incomprehensible. The author writes, p. 119, that "The model presented in this subchapter examines whether the economic crisis has an impact on Greek professional football clubs. Two models were run: the first one with GDP as a single explanatory variable and the second one with more variables. In this research GDP rather than GDP per capita has been used because the population in Greece changed during the years of crisis and we want to check impact of all available resources rather the prosperity level only."

But the reader does not know where she got the base data on the revenues of football clubs? It turns out that the declared econometric proceedings in the strict sense did not take place. So the application of econometrics at work is also very questionable.

In terms of the applied statistical analysis, the reviewer has serious doubts. It would seem that the statistics will defend itself, because it was the author or statisticians who only had to substitute data into

the formulas. As the source data is reliable and the correct formula has been used and there is a result. The problem is whether the data was reliable? And are the econometric models used? And this is where doubts arise.

The author writes on pp. 119-120 "As shown in Table 40 (note: the values given in the text do not correspond to the values in the table) , the average value of the dependent variable – the logarithm of revenues divided by fixed assets – is 0.596 (note: Where this value / in the table we have 0.259) (±0.0882), having a negative value as a minimum, which is a solid indicator that some clubs had negative economic results during the period under review. It can be argued that this negative outcome would be expected given the economic crisis; But on the other hand, it has been proven (note: Where's the proof? - we have only a cursory conclusion) that there are differences between the economic results of the club, as shown by the comparison of the minimum and maximum values. So the economic crisis itself may be the main cause of this. The aim of this analysis is to examine this impact, but the crisis has not had a common impact on clubs. As for GDP (logarithm), the average value is 9.992 (note: Data from which table?), with a standard deviation of 0.061. The logarithm of the employment rate has an average value of 1.058, while it is necessary to highlight the large difference between the minimum value (0.892) and the maximum value, which in fact shows the rapid increase in unemployment during these four years. As for the other independent variables, the average value of total assets is, as expected, higher than liabilities (16,114 to 15,968), although it should be mentioned that the standard deviation of the latter is higher than the value of the former (1,234 ± for total assets to 1,416 for total liabilities), which shows that the crisis prompted the banks (note: after all, we are studying clubs? We don't assume clubs didn't respond to the crisis) and other lenders to reduce their lines of credit."

The author writes on p. 119-120 As presented in Table 40 (Note: the values given in the text do not correspond to the values in the table), the mean value of the dependent variable – the logarithm of the revenues divided by fixed assets – is 0.596 (Note: where this value / in the table we have 0.259) (±0.0882), having a negative value as the minimum one, which is a solid indication that some of the clubs had negative economic performance during the examined period. It could be argued that this negative performance would be expected, given the economic crisis; but, on the other hand, (Note: where is the proof? - we have only a cursory conclusion) what is being proven is that there are differences between the club's economic performance, as shown by the comparison of the minimum and the maximum values. Thus, the economic crisis itself could be a main reason of that. The very aim of the analysis in hand is to examine this impact but the crisis did not have common impact among the clubs.

As for the GDP (logarithm), the mean value is at 9.992 (Note: data from which table?), with a standard deviation of 0.061. The logarithm of the employment rate has an average value of 1.058, while it should be highlighted the wide difference between the minimum value (0.892) and the maximum value, which, in fact, shows the rapid expansion of the unemployment in these four years. Regarding the rest of the independent variables, the average value of the total assets is, as expected, higher than the liabilities (16.114 to 15.968), although it should be mentioned that the standard deviation of the latter is

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higher than the value of the former (±1.234 for the total assets to ±1.416 120 for total liabilities), showing that the crisis led banks (Note: Are we researching clubs? We do not assume that the clubs did not react to the crisis) and other lenders to decrease their lending facilities.

Table 41. Spearman correlation matrix between variables. It is not known how it was calculated, what about the p. This table has the following data in the last row?:

City	0,33	0,00	-0,66	-0,72	0,00	0,00	0,00	1,00

The given result of -0.66 is incomprehensible, (note: does this mean that as the size of the city increases, the size of assets decreases? Interesting - contrary to the conclusions).

On page 121 of the text: "As for the rule of law, the whole chapter regarding the institutional economics as well as the interviews of the primary research prove that the willingness to attend the matches in the stadia and the attractiveness and competitiveness of the championship are being affected by the rule of law, the integrity of the game and the overall perception of how corrupted the whole system is". Note: what the author writes is very incomprehensible what she wants to examine, after all, she does not examine the desire to participate in competitions, we do not have such a variable.

On page page 122. paragraph: " The model (note: we do not know what model?). . is called Fixed Effect Model (FEM) as although the constant may vary from unit to unit however the value of the constant αi assigned to each stratified unit is assumed to remain unchanged over time. One of the drawbacks of the FEM model is that in case of introducing several dummy variables, several degrees of freedom are lost, thus the reliability of the model is weakened, and the overall econometric inference is questioned." and the next paragraph to ".... εit – the error term of the regression for unit i in period t " (Note: one may get the impression that this is a theoria from some other study not fitting this work).

The text on page 122 states: "This analysis shows that the economic decline has a direct impact on the fixed asset revenues of football clubs, because when GDP falls by 1%, revenues decrease by 3.83% (Table 43) and the result is statistically significant ($p = 0.045 < 0.05$) (Annex C, Table 67), although R squared is only 16%, (Note: This means that the model explains 16% of the phenomenon, which is why we err more than we describe the phenomenon by regression), i.e. the model explains only a small proportion of the variation in the dependent variable. This can be explained by others factors that are hard to be quantified, such as the quality of management, as well as th quality of players which, as described in 2.4 play a significant role in the team's efficiency.

On sytron 123. "The model of the following regression is the one of fixed-effects, using 44 observations, including 11 cross-sectional units, with a time-series length of 4, having as the dependent variable the lRev.toFA, while the other variables were omitted due to exact collinearity. The results show

that the GDP has a direct impact of 2.670, indicating that when GDP drops by 1%, the revenues decrease by 2.67% (Table 44), although it should be highlighted that the result is not statistically significant (p=0.06>0.05) (note: which means that we try to explain the phenomenon, abstracting from the adopted statistical regimes)   (Appendix C, Table 68). Coefficient for total assets is negative that indicates that higher assets result in lowering efficiency of the club".

On page 124 " The difference between the two regressions is that, although both showed that the economic crisis, presented as a decrease of GDP, has a negative impact on the clubs' economic performance, in the three-variables regression the result is not statistically significant while in the single-variable regression the result is statistically significant, hence it could be used as an explanatory factor. This difference is an indication that GDP has an impact on clubs' financial performance, but, as stated above, the impact differs between the clubs. " (Note: In light of the results, we can only conclude, not claim, that this is the case. Statistical research supports, not prejudges, inferences!!).

On page 124. " The problem, however, is that the rule of law parameter has a correlation coefficient of 0.99 with GDP. Therefore, the inclusion of both variables would lead to collinearity, thus affecting the reliability of the analysis." (Note: so if facts and statistics confirm trends, so much the worse for statistics???!!!)

On page 124. Thus, it cannot be considered a coincidence that the economic crisis was recorded in a country such as Greece that scored low on the rule of law and where the lack of an institutional environment is quite evident in the field of football" (Note: Football is not out of touch with reality, it functions like the rest of the economy. And since it is assumed that football clubs operate on market principles, it is difficult to separate the discussed indicators)

On page 125. "This parameter is therefore significant because the regression shows a statistically significant negative effect of total assets on financial results, which can be interpreted that even large teams, in the crisis period, do not have the necessary capital for expensive – and therefore quality – transfers increasing adequately their revenues." and the next verses of p. 125 to "Hence, although a team can invest in its stadium and physical infrastructure, the revenue-to-asset ratio does not increase. (Note: It is worth rewording, pointing out conclusions, and trends calculations that are statistically significant should be cited only as confirmation of hypotheses.)

I have also had a look at Table 40 on page 120, under the table there are relevant comments on the components included:

Table 40. Description of key variables

item	Variable	Full description	Observations	Mean	S.D.	Min	Max	Data Source
1	lRevtoFA	Logarithm of revenue divided by fixed assets	44	0.259	0.39	-0.42	1.82	FC'financial statements
2	lGDP	Log of country GDP	44	4.31	0.03	4.27	4.34	Statistics Hellenic Statistics
3	Lta	Logarithm of total assets	44	16.1	1.26	13.9	18.5	FC'financial statements
4	Ltl	Logarithm of total liabilities	44	15.968	1.43	12.67	18.75	FC'financial statements
5	Lhd	Logarithm of household debt as a proportion of GDP	44	1.78	0.019	1.76	1.81	CEIC,Bank of Greece
6	lRoL	Logarithm of a country's rule of law score	44	-0.309	0.053	-0.39	-0.24	Global Economy website
7	lUnemp	Logarithm of the unemployment rate in the country	44	1.058	0.14	0.90	1.25	Statistics Hellenic Statistics
8	City	Ordinal value	44	1.455	0.50	1.0	2.0	Statistics Hellenic Statistics

Source: own calculations

Comments:

1. It is not known in what period we have the study

2. It is not known what the interval is (monthly, quarterly, yearly ...)

3. items 2,5,6,7 have 44 observations (so we study 44 years??)

4. as GDP is calculated, because it comes out, the assets of clubs have almost 10,000 times the value of Greece's GDP

5. what does item 8 - 44 cities ??

6. item 6 in the figure next to it (rule of law index, change in the period under review, or maybe other   ...)

7. As for the correlation, I do not know what the source data looked like, so it is difficult to talk about them, but the number of observations raises doubts (see point 3)

It should be emphasised that the errors noted in the statistical calculations indicate the need to check it in detail.

Returning to the methodology of work, it should be stated that in connection with the discussed shortcomings, the main research procedure at work turned out to be a survey with the participation of fans of various teams of the Greek football league in different cities. This was a quantitative study, using data obtained through a closed questionnaire, among the football community in Greece to determine changes in their decisions to attend football matches during the economic crisis. But as the reviewer mentioned, the author asks respondents in the context of the financial crisis. Not sure why? The paper contains information that the study was conducted between January and March 2020. As for age, 28.5% of the study group was in the age group from 18 to 29 years, 25.2% in the age group from 30 to 39 years, 26% in the group 40-49, and 20.3% are over 50 years old (Fig. 26). According to the presented data, nearly 30% of the respondents are people who were under 20 years of age during the crisis – they could not have their income, the same applies to the change of employment, including education, which 10

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years earlier could have been different. Correlations with these variables do not make sense. If the state was examined during the crisis of 2008 and the survey was conducted in 2020, the youngest 18-year-old respondent was 6 years old at the time! Does he remember and can credibly present the problem of the crisis in Greek football and was it worth asking him how much he earned and what was his professional status? Is this a curiosity? It was possible to think about the sense of including the survey in research, the author should know that secondary research is the most important in economic research.

The author writes that the number of participants in the study consists of 123 people who took part in the research by completing the survey. We tend to encounter such a group of respondents in relation to the total defined population more often in undergraduate and master's thesesThe author on page 103 writes that: "The researcher was not able to make a probability test, because there is no practical possibility of having a list of all Greeks participating in football matches. For this reason, random selection was used. Another option would have been to continue systematic sampling, but a deeper demographic analysis of Greeks attending football matches (gender, age, education, occupation) during the crisis was not available to the author of the work. For this reason, the possibility of selecting samples was used. Therefore, as will be further stated in the limitations of the study, the results of the analysis cannot be generalised to the entire population of Greek citizens.'

This statement is very "novel", if research cannot be generalized to a specific, strictly defined population, what is the point of such research? Unless it is a preliminary pilot study, but such methodological procedure in the doctoral thesis is unacceptable. When planning the research, the author had to determine what accuracy of the assessment of the parameter she was interested in would receive with a sample of a given size, as well as how likely it is that the decision made on the basis of the test will be correct. But the most important thing is how large the sample had to be to achieve the intended level of accuracy and reliability. It is the analysis of the strength of the test and the assessment of the sample size that would be the most important in view of the research methodology. Greece has a population of 10 million. About 60% of Greeks, or about 6 million, participate in various forms passively or actively in football. In Greece, the professional Super League is estimated to attract 1.5 million fans a year, with Greek clubs earning an average of €8.9 million. The Olympiacos football club has almost 3 million fans. So how do you study anything from Greek football on a sample of 123 people?

Notably, two researchers, Zorzou, Amalia and Gdonteli Krinanthi, examined the demographics and personal characteristics of 2,322 viewers in Greece. All participants were randomly selected football fans and this is certainly a representative group that meets the test power requirements. And it could also be greater for the reliability of the study. The aforementioned work was created in 2022 and it should be assumed that the author knows this text. In this type of research, there must be a non-conditionally representative sample, i.e. a part of the population that allows at least an approximate description of the entire population. Meaningful inference using such a research tool can start with 500 people, and the sample proposed by the author does not meet this condition and should be called unrepresentative or burdened. This is a fundamental methodological error!

The survey is also poorly constructed. There is only one question in the survey directly related to the main problem of work, it is the question about the price of tickets during the financial crisis. One could also expect such questions as: about matches, i.e. sports products purchased in the first place, about what the prices of tickets for matches could be attractive for respondents at that time, about preferences in buying tickets, and therefore about key products, and above all whether they made loyalty purchases? – such a common phenomenon among football fans. These surveys would probably make it easier to analyse the behaviour of Greek football fans' customers during the crisis. The author asks respondents to the survey in the context of the financial crisis (11.12.13, 19) how can we be sure whether respondents differentiate between "financial crisis" and "economic (economic) crisis? At the same time, it asks respondents in the context of the economic crisis (Q5,6,10) (Questions: 5. "Your income during the economic crisis 2009-2016": question 6. "During the economic crisis 2009-2016: employment status", question 10. "Before the economic crisis, how often did you go to football matches on average a month?"

In interviews, the author will also ask alternately about the economic and financial crisis. In the context of the economic crisis on pp. 195,200,202 in the question What are the other reasons, apart from the economic crisis mentioned earlier, for the reduction of spectators in the stadia? And in the context of the financial crisis on pp. 194,199,202, in question: „To what extent did the financial crisis affect the number of spectators at the stadia "

In interviews, the author will also ask alternately about the economic crisis twice and once about the financial crisis. Why did she do this? Does he not see the difference? This is a mistake!

The research methodology used by the author has one more drawback: the negative aspect associated with retrospective research. The respondent is to answer detailed questions about facts taking place in a distant time. The survey conducted in 2020 concerns issues that are 4-12 years away in time. It would be interesting to refer to Ebbinghaus's theory of the forgetting curve.

The first two methods were intended to be complemented by a third, this time in the field of qualitative research, using the interview method consisting in examining the oral opinions of sports journalists dealing with football in a direct conversation between the researcher and respondents, in order, according to the author, to thoroughly examine aspects of the Greek football market and the impact of the economic crisis.

According to the author, p. 102 "The qualitative study was conducted by interviewing three sports journalists, specialized in covering professional football events. The reason to concentrate on journalist is that they are experts in the football nuances and still willing to share their knowledge. The club managers and the athletes are too deeply involved in the internal affairs of their clubs. Therefore, usually reveal only some facts and hide the others. Initially more journalist was invited but they did not reply to researcher's request to participate in the research and these three are the sample of convenience"

This is unscientific conduct, even pseudo-scientific, a relative interpretation unacceptable in scientific work.

While the first two declared research methods could have had a real impact on solving the research problem, it seems that the third method has a relative significance and can be treated completely secondary also due to the insufficient number of relationships and the doubt of its representativeness. In the research proceedings on the problem of work, it is completely irrelevant.

At this point, the problem of methodological triangulation in consumer purchasing behaviour research can be signalled. These are very important theoretical aspects of triangulation as a research approach in marketing for gaining knowledge about buyer-consumer behaviour. The author may have been interested in the use of method triangulation in the study of consumer purchasing behavior, and it is precisely such behavior of fans – buyers of a sports product of tickets for matches that the author examines. Triangulation in qualitative research is of great importance in the processes of creating in-depth and unique marketing knowledge. In a broader methodological context, the application of the principle of method triangulation significantly increases the level of scientific work. It would seem that the third research method adopted by the author will meet this principle, but this is not the case.

The author puts forward research hypotheses in her work, which raise great doubts. The main hypothesis of the study is that the economic crisis has had a negative impact on the revenues of Greek professional football clubs, in particular from ticket sales. This hypothesis is supported by the following secondary hypotheses: H1. The stadium attendance – number of attendees – decreased during the period of the economic crisis; H2. The competitive performance of football clubs during the crisis diminished, and among the reasons is lower quality of transfers; H3. The attractiveness and competitiveness of the game – as perceived by the people – decreased during the crisis; H4. Factors conditioning attendance have changed during the crisis; H5. The impact of crisis on the decision of supporters to attend the games was insignificant.

The hypothesis raises doubts: H1 is a thesis with no chance of proving, because there is nothing? The data is historical and available, we know what the turnout was; H2 cannot be proven by these studies, because it would be necessary to correlate with, for example, the value of player transfers. H4 have changed, but how? The hypothesis is undefined. Thus, I cannot state the correct process of data collection, as well as their evaluation, nor is there any methodologically correct analysis, inference and verification. Unfortunately, at least 3 of these 5 hypotheses have not been methodologically correct verified and proven.

One more thought that could be helpful for future research, namely that references and comparisons should be made to stadium attendances in other European leagues, this could be extremely interesting and show the possible internationalisation of the football crisis phenomenon and its consequences. Comparative material would be easy to obtain from ready-made publications. The financial crisis in the first decade of the twenty-first century did not spare other European bakery clubs, apart from Italy and Greece, the crisis was important for the economic prosperity of the football business in countries such as England, Scotland, Belgium, Portugal and others.

7. Conclusion

The author did not properly review and evaluate the literature. She omitted many important items. The author also does not specify the terms used, or specifies them too late, using them earlier. Three of these five hypotheses have not been methodologically soundly verified and proven.

Subchapter 5 in Chapter 3, which is important from the point of view of the subject of the work, concerning tickets sold by Greek football clubs, does not contain any relevant content. Without any relevant data of own research. The main part of the work was also to be the material contained in chapter 5 subchapter 3. However, this chapter entitled "Greek clubs' performance during the crisis (macroeconomic perspectives)" is completely devoid of significant cognitive aspects. In the most important, this "sensu stricto" related to the research problem of the work of subchapter 4 on attendance at the stadium placed in chapter 5, there is no quantification completely, from a scientific point of view there is nothing cognitively significant in it!, no features that have been counted and measured. There are only survey results and little cognitive theoretical arguments. Even the timeline on which the attendance would be placed is unknown (2008 or 2016?).

The models used are fraught with fundamental shortcomings. The reader does not know from where and what baseline data on the revenues of professional Greek football clubs does the author have?

There are such doubts: the declared econometric procedure in the strict sense would not make sense. Statistical calculations are exaggerated, because the collected data would be enough to calculate in Excel, it would be a sufficient cognitive element, because the number of variables and possible correlations was very limited. In terms of the applied statistical analysis, the reviewer has serious doubts.

The survey used in the sample proposed by the author does not meet the basic condition of representativeness, hence such a sample should be called unrepresentative or burdened. This is a fundamental methodological error. In addition, the construction of the survey has serious substantive, practically disqualifying data obtained. In such a construction and with an unacceptable size of the research sample, the sense of including the survey in the research is questionable.

It is even worse with the third method, which the author intended to complement the first two. This time it was to be a method accumulating knowledge in the field of qualitative research. The author wanted to use the interview method consisting in examining the oral opinions of sports journalists dealing with football in a direct conversation between the researcher and the respondents. While the first two declared research methods could have had a real impact on solving the research problem, it seems that the third method could be treated completely secondary from the beginning, and also due to the insufficient number of relationships and the doubt of its representativeness turned out to be completely useless. Only three accounts !!! In the research proceedings on the undertaken research problem of work, this procedure is completely meaningless.

Apart from the fundamental methodological errors disqualifying the work, the study is still 7-9 years late.

Thus, in the light of the above-mentioned comments, I conclude that the reviewed doctoral dissertation of the magister Stamatiki-Maria Atsave does not meet the conditions set out in Art. 187.1. Law on Higher Education and Science of July 20, 2018. (Journal of Laws of 2022, item 574 and requests the Scientific Council of the Discipline of Economics and Finance of the University of Gdańsk to prevent the thesis from further stages of the doctoral procedure.

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