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SPORT, LEISURE & TOURISM | RESEARCH ARTICLE

Wage expenditures and sporting success: An analysis of Norwegian and Swedish football 2010–2013

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Abstract: This study examines the relationship between wage expenditures and sporting success in Norwegian and Swedish football. While previous studies have shown a strong correlation between wage expenditures and sporting success, some question whether there is a correlation between what football players earn and their performance on the football pitch. In this study, we use data from 44 Norwegian and Swedish football clubs over a four-year-period from 2010 to 2013. We find a significant correlation between wage expenditures and sporting success measured in terms of final league standing and results in cup competitions. We also find a significant correlation between wage expenditures and spectator attendance. There are also some differences across the countries. For example, wage expenditures have stronger explanatory power in Sweden than in Norway. We discuss possible explanations for these differences.

Subjects: Sport and Leisure Studies; Sport and Leisure Management; Business, Management and Accounting

Keywords: football; wage expenditures; sporting success; spectator attendance; Norway; Sweden

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PUBLIC INTEREST STATEMENT

This paper examines the relationship between football clubs' wage expenditures and sporting success. Several studies suggest that "financial muscles" matter and that spending on transfers and player wages to a large extent determines success in international football. In this paper we examine the relationship between wage expenditures and sporting success in Norwegian and Swedish football, using data from 44 clubs in the two top divisions of each country over a four-year period (2010–2013). We measure sporting success in three ways: (1) final league standing, (2) results in cup competitions, and (3) spectator attendance. We find significant relationships between wage expenditures and each of these measures of sporting success.

1. Introduction

This study examines the relationships between football clubs' wage expenditures, spectator attendance, and different measures of sporting success. Wage expenditures typically constitute the biggest expenditures for football clubs (Ferri, Macchioni, Maffei, & Zampella, 2017). Previous studies have shown that there is a strong correlation between wage expenditures and sporting success (Dimitropoulos & Limperopoulos, 2014; Ferri et al., 2017; Frick, 2011; Hall, Szymanski, & Zimbalist, 2002; Kuper & Szymanski, 2010; Morrow, 1999; Szymanski & Kuypers, 1999). Hall et al. (2002, p. 150) point out the importance of financial muscles in determining success in international football:

the well-established and accepted player markets of soccer leagues (not just in England but worldwide) ensure that players are paid a market rate for what they do. Not only are soccer clubs free to buy a better team in the market but the market worldwide is large enough to ensure that such a team can be assembled relatively quickly, and consequently spending determines success.

One particular characteristic of football clubs is that they must take into account two types of performance logics: a consideration for sporting and financial performance (Carlsson-Wall, Kraus, & Messner, 2016; Szymanski, 1998). On the one hand, football clubs are under strong pressure to remain competitive (avoid relegation, qualify for international tournaments etc.). On the other hand, clubs must be financially sound, and, in the long run, be able to provide sufficient returns to their owners. In Norway, football clubs' wage expenditures and revenues have received lots of attention in recent years since many of the clubs have been struggling financially and have not been operating in a financially sustainable way (Arenberg & Hvamstad, 2016; Bertheussen, 2011; Gammelsæter & Ohr, 2002; Kringstad & Olsen, 2016; Thrane, 2012). Football clubs in Sweden have experienced similar financial problems.

We designed a study that examines the correlations between wage expenditures, spectator attendance and sporting success in Norway and Sweden. Both of the two countries are of roughly equal size, and have similar league systems and structures (for a discussion of differences and similarities, see Gammelsæter, 2009). Furthermore, clubs in both countries have suffered from weak finances, declining spectator attendance, and lack of sporting success, especially in international tournaments. In addition, it would be interesting to investigate whether the relationship between wage expenditures and sporting success in these two countries is as strong as suggested by studies conducted in the context of the major football leagues in Europe (e.g. England). In our view, there are two factors, which indicate that the relationship might not be as strong in Norway and Sweden as in other countries.

Firstly, we perceive the top divisions in Norway and Sweden to be leagues where the differences between the clubs are relatively small. By this, we mean that very few clubs perform steadily throughout a season, and even less so over a multi-year period. We have seen several examples of clubs in the top divisions in Norway and Sweden, which after a strong final league standing have collapsed in the following season. Conversely, some newly promoted clubs have been competitive right from the start. However, it is likely that the relationship between wage expenditures and sporting results is stronger over a longer period than in the short run. Therefore, in the study we will use data covering a four-year period.

Moreover, our study differs from previous studies that have focused only on sporting success in league competitions. In this study, we attempt to measure sporting success in three different ways through measurement of final league standing, cup results and spectator attendance. This leads to our first research question:

- (1) What is the relationship between football clubs' wage expenditures and the clubs' sporting success measured as league standing, cup results and spectator attendance?

In addition, we would like to examine the correlation between sporting success and spectator attendance. There is some existing research on spectator attendance in sports (Borland & MacDonald, 2003; García & Rodríguez, 2002; Mehus, 2005; Solberg & Hammervold, 2008; Solberg & Mehus, 2014). In the Norwegian context, researchers have studied what motivates spectators to attend football matches (Mehus, 2005), what types of factors influence the spectator attendance (Kringstad & Solberg, 2012) and challenges related to how clubs can attract spectators to the football stadiums (Solberg & Mehus, 2014). Therefore, we find it interesting to examine more closely the relationship between different variables measuring sporting success and how these can explain variation in the clubs' spectator attendance. This leads to our second research question:

- (2) What is the relationship between different measures of sporting success such as league standing, cup results and spectator attendance?

Figure 1 illustrates the two research questions that guide our study. The first research question addresses the relationship between wage expenditures and the three variables (1) league standing, (2) spectator attendance and (3) cup results. The second research question addresses the relationship between league standing, cup results, and spectators. In Figure 1 these relationships are illustrated by the dotted lines.

2. Wage expenditures, spectator attendance, and sporting success

In this section, we will first outline and discuss some key characteristics of the economics of football clubs. This is followed by a review of previous research pertaining to our two research questions: (1) the relationship between wage expenditures and sporting success, and (2) the relationship between sporting success and spectator attendance.

2.1. Key characteristics of the economics of football clubs

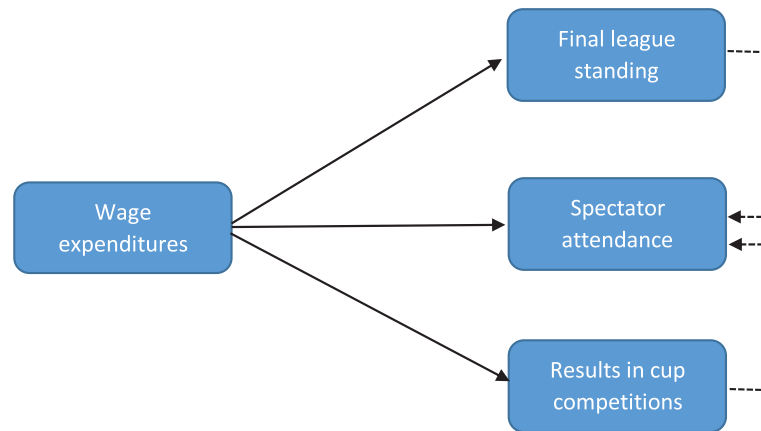
Football clubs operate at the intersection between sports and business activities (see, for example, Wagner, Storm, & Nielsen, 2016). However, researchers point out that the business of football differs from other business activities in several ways (Gammelsæter & Ohr, 2002, p. 12–15). Football clubs not only compete with each other, but also are dependent on each other since they play in the same league, and all benefit from increased interest from supporters and sponsors (i.e. offer an attractive product with high market value). Furthermore, the level of success of football clubs can also be measured in different ways.

One particular feature of football clubs is that these organizations must take into account and balance two different types of performance logics: consideration for sporting as well as financial performance (Carlsson-Wall et al., 2016; Szymanski, 1998). Clubs are under a continuous pressure to be competitive in the short run (for example, by quickly strengthening the player squad before a transfer window closes). At the same time, clubs need to be financially sound and sustainable, so that they are able to deliver returns to their owners in the long run.

2.3. Wage expenditures and sporting success

Wage expenditures constitute a large part of the expenditures of football clubs (Ferri et al., 2017). Previous studies show that there is a strong correlation between wage expenditures and sporting success (Frick, 2011; Hall et al., 2002; Kuper & Szymanski, 2010; Morrow, 1999; Szymanski & Kuypers, 1999). For example, a study carried out in Greece shows that higher player wages are associated with higher levels of sporting success over a five-year period (Dimitropoulos & Limperopoulos, 2014). In another recent study of Italian football, Ferri et al. (2017) finds a positive correlation between player wage expenditures and sporting performance.

Figure 1. Research model.



One way for football clubs to improve their competitiveness in the short run is to improve their player squad by purchasing expensive high-profile players in the international transfer market. However, such acquisitions require a club to spend more money on player wages. In several contributions, Szymanski and colleagues examine the relationship between wage expenditures and league standing in English football (Kuper & Szymanski, 2014; Szymanski, 2010; Szymanski & Kuypers, 1999). For example, Szymanski and Kuypers (1999) examine this relationship in the context of the English Premier League in the period 1978 to 1997, and find that the clubs' wage expenditures explain more than of 92% of their league standing. In a similar study covering the period 1998 to 2007, which also included clubs at the second highest division, the explanatory power is about 89% (Kuper & Szymanski, 2010). For the period 2003 to 2012, the explanatory power is about 91% for the clubs in the two top divisions in England (Szymanski, 2014).

Several other researchers also document that wage expenditures can explain from 77% to 90% of the variations in the performance of clubs in domestic league competitions (Forrest & Simmons, 2002; Gammelsæter & Ohr, 2002; Sperling, Nordskilde, & Bergander, 2010). Sperling et al. (2010) note that money does not mean everything, only about 85 percent. This somewhat humorous description highlights the importance of financial muscles in international football, namely that the size of the clubs' wage expenditures is an important factor in contributing to sporting success. Other factors, such as coaching and trainer skills, spectator support, etc. appear to play a lesser role in determining sporting success.

In Norway, several researchers focus on the relationship between economic factors and sporting success. For example, Kringstad and Olsen (2016) find that the clubs' budgeted revenues is an important driver for sporting success, especially when it comes to avoiding relegation. Several other studies focus on wage expenditures in Norwegian football (Arenberg & Hvamstad, 2016; Bertheussen, 2011; Gammelsæter & Ohr, 2002; Thrane, 2012). Gammelsæter and Ohr (2002) examine the role of wage expenditures in the Norwegian Tippeliga for the period 1997 to 2000, and conclude that the variation in the wage expenditures of the clubs could explain 77% of the variations in league standing. Hence, we consider it interesting to examine whether this relationship is still strong, as well as examine if there are any differences between Norway and Sweden with respect to the importance of wage expenditures.

2.4. Sporting success and spectator attendance

The second research question pertains to the correlation between sporting success and spectator attendance. There is considerable research on the role of spectators in football, such as what motives spectators to attend matches, what factors influence spectator attendance numbers, as well as what challenges clubs experience when it comes to attracting spectators to the arenas (e.g.

Mehus, 2005; Solberg & Hammervold, 2008; Solberg & Mehus, 2014). We believe that spectator attendance is perhaps the best way to measure the interest of a given sport, league or club. The clubs that perform well, create interest, and eventually attract fans.

3. Empirical context: Norway and Sweden

In this section, we present a brief description of the empirical context. We identify and outline some key issues and trends in Norwegian and Swedish football, with focus on league systems, sporting success in international tournaments, wage expenditures and spectator attendance. This contextual description functions as a backdrop against which the empirical results will be interpreted.

3.1. Sporting success

As mentioned above, in this study we choose to study football clubs in Norway and Sweden. These two Scandinavian countries are roughly similar in size and have league systems which to a large extent are comparable (for a discussion of differences and similarities see Gammelsæter, 2009). The top two divisions of the Norwegian football league are Tippeligaen (the top division) and the OBOS league (the second level). In Sweden the top two divisions are called Allsvenskan and Superettan. In Sweden the league name is not branded as it is in Norway. However, starting from the 2017 season, the Norwegian Football Association has chosen a more sponsor-neutral name for the top division (Eliteserien). Henceforth, the name Tippeligaen will be used.

Both Norwegian and Swedish football have in recent years had a negative development in terms of sporting success, especially in international competitions. Norway's national team enjoyed success during the 1990s until the early 2000s. During this period, Norway repeatedly qualified for the international competitions, and performed well in terms of the FIFA World Ranking. Sweden also enjoyed a "golden era" during the early 1990s, reaching the semi-finals of the Euro 1992 and placing third in the 1994 World Cup. However, Sweden did not qualify for another international championship until Euro 2000. Since that time, Sweden has participated in every European Championships, but failed to qualify for the 2010 and 2014 World Cups. However, the Swedish national team has managed to reverse this trend by qualifying for the 2018 World Cup.

With the exception of Molde's short stint in the Champions League during the 1999/2000 season, Rosenborg has been Norway's only representative in the most prestigious European club competition. With the exception of the 2003/2004 season, Rosenborg qualified for the group stage of the Champions League every year from the period 1995/1996 to 2005/2006. The last time Rosenborg managed to qualify for the Champions League was during the season 2007/2008. Even though Norwegian clubs have managed to qualify for a group stage in the Europa League from time to time (the second-tier club competition in Europe), most recently in the 2017/2018 season, the performance of Norwegian clubs has generally been poor.

In Sweden, IFK Göteborg qualified for the Champions League four times during the period from 1992/1993 to 1997/1998, while AIK qualified in 1999/2000 and 2000/2001. Then roughly 15 years passed before another Swedish club managed to qualify. Malmö FF, which has won Allsvenskan four out of the last five seasons (2013, 2014, 2016 and 2017), qualified for the Champion League in the 2014/2015 and 2015/2016 seasons. In addition, like their Norwegian counterparts, Swedish clubs have also occasionally qualified for the Europa League, but have generally not had much success. However, it should be noted that FK Östersund reached the Round of 32 in the 2017/2018 Europa League.

3.2. Wage expenditures

In both Norway and Sweden, there are national variants of regulatory programs, which seek to control and improve the clubs' finances and reduce deficits. After several years of growth in club wage expenditures (Figure 2), in 2009 the Norwegian Football Association (www.fotball.no) introduced a financial control system, with the aim of creating a sustainable financial foundation for Norwegian football. While there is no corresponding control and reporting system in Swedish football, the

Figure 2. Evolution of wage expenditures in Allsvenskan (Sweden) and Tippeligaen (Norway) 2006–2013.

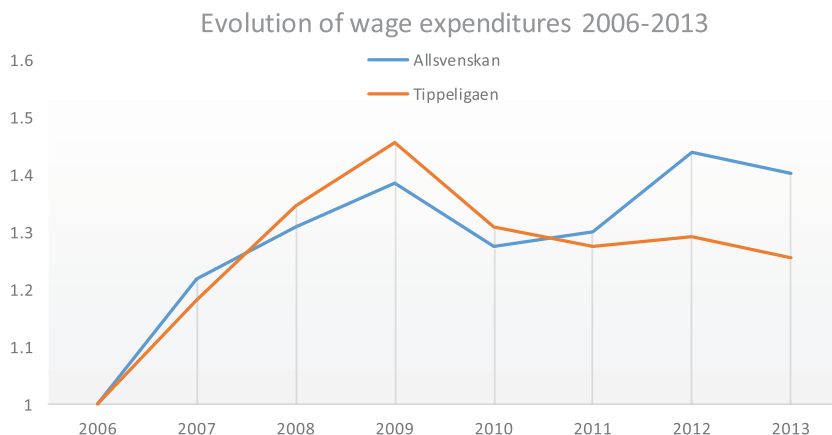
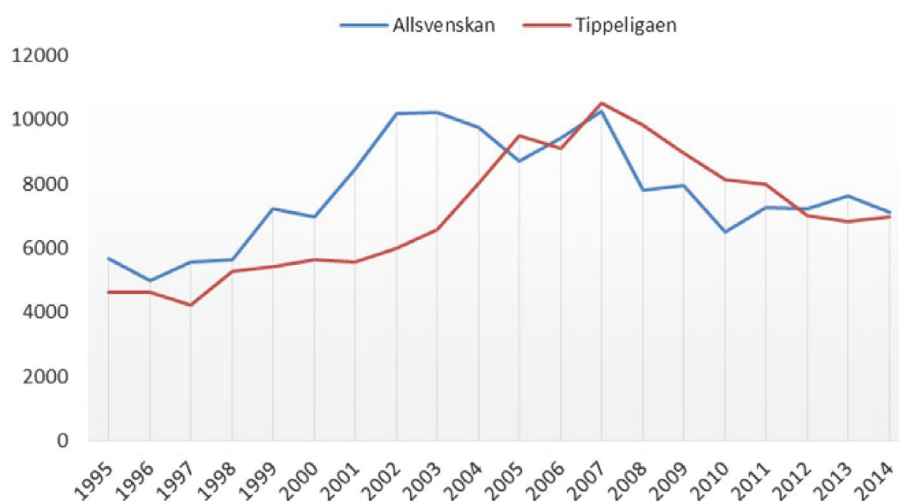


Figure 3. Average number of spectators in Allsvenskan (Sweden) and Tippeligaen (Norway).



Swedish Football Association (www.svenskfotboll.se) publishes a report on the economics of the football clubs in the Allsvenskan each year. The report for the 2013 season revealed that the finances of Swedish clubs had much room for improvement. For example, the wage expenditures have grown sharply since 2006 (Figure 2). Despite a marginal decline from 2012 to 2013, wage expenditures have increased by 40% over seven years. When it comes to Tippeligaen, we see that wage expenditures during the same period have increased by about 25%. What is interesting here is that wage expenditures increased by 45% from 2006 to 2009, but from 2009 to 2013 they have been reduced by about 20%. A recent study in Norway shows that there is a tendency for clubs to move away from the use of fixed salaries and instead shift towards a greater use of variable performance-based compensation (Arenberg & Hvamstad, 2016).

3.3. Spectator attendance

A number of media reports indicate that Norwegian and Swedish clubs have not been successful in attracting spectators to the arenas in recent years. Therefore, the low level of spectator attendance has received considerable attention. In May 2011, a headline in the newspaper Norwegian newspaper Aftenposten stated that spectators are not attending matches in great numbers anymore. The article reports that the average number of spectators in the Eliteserien for the first time in seven years dipped below 8,000. At the end of the season, the average number of spectators per match stood at 7,994, the lowest since the 2003 season. However, the negative trend continued, and in

November 2014, the Norwegian broadcaster TV2 published an article which stated that an average of 2,000 spectators per match had disappeared from Tippeligaen since 2009. In this article, it was revealed that the average spectator attendance for 2014 had dropped all the way down to 6,961.

Figure 3 shows an overview of the spectator attendance numbers for Allsvenskan and Tippeligaen over the last 20 years. Although the average number of spectators in Allsvenskan was at a high level in 2002 and 2003, with over 10,000 spectators per match, the figure shows that the spectator attendance in both Allsvenskan and Tippeligaen has fallen sharply since the 2007 season. It is difficult to determine whether the decline in the spectator attendance is due to changes in television deals, increased ticket prices or poorer sports performance. However, it indicates that the level of interest in football has decreased in both countries since 2007. Therefore, clubs have major challenges in terms of attracting spectators to their arenas (see Solberg & Mehus, 2014). In light of this negative trend, it would be interesting to get a better understanding of the relationship between different variables associated with the clubs' sporting success and spectator attendance.

4. Method

The research design can be characterized as an archival-based panel study (2010–2013) with the clubs as research units (see, for example Gujarati, 2009). We choose to include clubs in both Norway and Sweden, which means that we are able to look at differences and similarities between these countries, if any. In our view, it is natural to study these two countries due to similarities in terms of overall wage expenditures and league system and structure. In addition, including two countries provides a larger amount of data than would be possible to obtain in a single-country study. This arguably helps strengthen the study.

In this study, we use data from 44 Norwegian and Swedish clubs over a four-year period from 2010 to 2013. We mainly rely on secondary data sources, available via the Internet, for example web sites and databases about football. Since we examine the relationship between the clubs' wage expenditures and their sporting success, it is necessary to collect data about the clubs' wage expenditures, league standings, cup results as well as spectator attendance.

We choose to include only the clubs that have been in the two top divisions throughout the period 2010 to 2013. In other words, we exclude clubs that have played at level three during the period. Furthermore, our choice of time period is a natural consequence of the transition to 16 clubs in the Norwegian league system. This expansion to 16 clubs took place in 2008 in Sweden and in 2009 in Norway. The reason we have excluded the 2009 season is because of missing data for the clubs in the Superettan.

It is challenging to identify the portion of wage expenditures that are related to players. In the clubs' financial statements, player wage expenditures are not disclosed separately in the income statement or in notes to the financial statements. Since we mainly obtain financial data from the clubs' financial reports, we choose to focus only on total wage expenditures. An argument for using total wage expenditures is that these can be seen as an expression of both the organizational capacity of the clubs and their sporting strength.

Theoretically, these two factors should have a combined impact on sporting success. Nevertheless, using total wage expenditures involves some systematic measurement errors, which can possibly affect the results, since total wage expenditures include expenditures and benefits paid to support and administrative staff, and not just pay and benefits to the players. Nevertheless, we argue that the variation in pay and benefits across clubs is due to a higher degree of variation in the wage expenditures of the player group than the variation in wages paid to other employees.

When retrieving data, we experienced some difficulties. For example, we lack data on the wage expenditures of three Norwegian clubs (Kongsvinger, Mjøndalen and Sarpsborg) that ideally should have been included in the analysis. We also lack data for individual seasons for three of the clubs included in the study: Lillestrøm (2012 and 2013), Vålerenga (2011 and 2012) and Fredrikstad (2013). Admittedly, these shortcomings weaken the analysis of the Norwegian clubs.

We measure attendance numbers as the ratio between the number of spectators and the spectator capacity of the individual football arenas. Therefore, the data relating to the spectator attendance is associated with some uncertainties. This is due to two factors, the first being linked to the clubs' spectator capacity. As we choose to focus on the capacity utilization of the clubs, we are dependent on obtaining information about the spectator capacity of the clubs' arenas. The challenge here is that we find different information from different sources. This may be due to the fact that many clubs are still building or expanding their stadiums. We choose to base these data on the latest information we are able to find about the stadiums, unless it is clear that there have been changes in spectator capacity. The second reason why there may be uncertainties when it comes to spectators relates to the existence of season ticket holders. It is well-known that clubs count spectators in different ways in practice. There are essentially two ways the clubs count spectators. Some clubs base these numbers solely on the number of tickets sold and season tickets, regardless of whether the holders of these tickets actually attend a particular match, while other clubs keep track of how many actually show up to attend a particular match. Regardless of how the spectators are counted, we use the officially reported spectator number.

5. Results

5.1. Descriptive statistics

The main variables in the study were wage expenditures (measured in 1000 NOK/SEK) (Wages), spectator attendance numbers measured by average number of spectators compared to spectator capacity (Spectator), league standing (League) and cup performance (Cup). Table 1 presents descriptive statistics for all major variables distributed across Norway and Sweden.

5.2. The relationship between wage expenditures and different measures of sporting success

In this section, we present the results for tests of the correlation between the clubs' wage expenditures and different measures of sporting success. First, we examined the relationship between wage expenditures and the clubs' final league standing. Based on data from the Norwegian clubs, we found a significant negative correlation of wage expenditures and league standing ($-0.571, p < 0.01$). For Sweden we found a significant negative correlation ($-0.777, p < .01$). A negative correlation means that higher pay is associated with better league standing. Since the best league standing a club can obtain is number one, a lower number (measured from 1 to 26) will indicate a better performance. A test of wage expenditures as independent variable and league standing as a dependent variable showed that the variation in wage expenditures explained 32.6% of the variation in league standing in Norwegian football. When it comes to the Swedish clubs, the explanatory power was 60.4%.

By testing the relationship between average wage expenditures and league standing based on Norwegian data, we found a correlation of $-0.609 (p < 0.01)$. This may indicate that the clubs' performance and wage expenditures correlate more over time than they do over the course of a single season. The regression analysis supported this claim. It showed that over the observed four-year period, the variation in club wage levels explained 37.1% of the variation in league standings.

When it comes to the average numbers for the Swedish clubs, we found an increase in the correlation coefficient. Here, the correlation coefficient increased to $-0.834 (p < 0.01)$. The regression analysis shows that for the same four-year period in Sweden, the variation in club wage expenditures explained 69.5% of the variation in league standings.

Table 1. Descriptive statistics

Variable	Number	Mean	St. deviation	Min	10%	50%	90%	Max
<i>Norway</i>								
Wages	71	34,689.62	21,729.08	10,386	15,412	27,944	58,262	115,971
Spectator	76	0.5612	0.1865	0.1375	0.3333	0.5502	0.7938	0.9436
League	76	10.90	6.89	1	2	10	21	26
Cup	76	8.961	4.203	0	4	9	15	19
<i>Sweden</i>								
Wages	100	30,207	18,634.38	7200	10,050	24,750	60,850	76,200
Spectator	100	0.3919	0.1522	0.1331	0.1959	0.3791	0.6033	0.6790
League	100	13.83	8.076	1	3	13	25	29
Cup	75	5.147	3.802	0	0	4	10	16

The second issue pertained to whether the clubs' results in cup competitions were associated with wage expenditures. We found a significant positive (although somewhat weak) correlation between wage expenditures and cup results 0.263 ($p < 0.05$) based on the Norwegian data. In the case of Sweden we found a similar correlation coefficient of 0.265 ($p < 0.01$). A test of wage expenditures as independent variable and cup results as dependent variable provided an explanatory power of 6.9%. For Sweden we found an explanatory power of 7.0%.

By basing these variables on the average values for the Norwegian clubs ($N = 19$), we discovered something interesting. Using the data-set based on the average wage expenditures and sporting success of the clubs, we found a correlation of 0.436. This correlation was only significant at the 10% level ($p = .062$). Using the average numbers for the Swedish clubs ($N = 25$), we found a correlation of 0.417. This correlation is significant at 5% level. The regression analysis showed that the variation in average wage expenditures among clubs in Norway explained 19% of the variation in cup results. Similarly, for Sweden, the average wage expenditures explained 17.4%.

Finally, we will explain the tests of the relationship between wage expenditures and spectator attendance. The correlation between wage expenditures and spectators was 0.443 ($p < .01$) based on Norwegian data. For Sweden, the corresponding number was 0.435 ($p < .01$). Wage expenditures explained 19.6% of the attendance figures for Norwegian data. In Sweden, we found an explanatory power of 18.9%. When we tested the relationships between average wage expenditures and spectators over the four-year period, we found similar results as those for annual observations for both Norwegian and Swedish clubs.

5.3. The relationship between sporting success and spectator attendance

The second research question concerns the correlation between spectator attendance and sporting success. The correlation between spectator attendance and league standing was -0.642 ($p < .01$) based on Norwegian data. The correlation between spectators and cup results was 0.217. For Sweden, the results showed correlations of -0.529 and 0.346, respectively. Both correlations were significant at 1% level. The variation in Norwegian league standings explained 41.2% of the variation in spectator attendance. In Sweden, this explanatory power was 28.0%. Again, we conducted tests to check how these variables were correlated over time. Based on the average figures for Norway and Sweden, we found that the correlations between spectator attendance and league standing were -0.674 and -0.522, respectively. This correlation was significant at the 1% level for both countries. The subsequent regression analysis for the same variables (spectator attendance = dependent variable, and league standing = independent variable) provided a correlation of 0.455 ($p < .01$) for the Norwegian clubs and 0.272 ($p < .01$) for the Swedish clubs.

The correlation coefficients between spectator attendance and cup results were 0.499 ($p < .05$) and 0.581 ($p < .01$) for the Norwegian and Swedish clubs, respectively. The regression model with the same variables had an explanatory power of 24.9% ($p < .05$) for the clubs in Norway, and 33.7% ($p < .01$) for the clubs in Sweden.

6. Discussion

6.1. Differences between Norway and Sweden

We discover large differences between Norway and Sweden when it comes to the relationship between wage expenditures and league standing. Over a four-year period, the variations in league standings are explained by the variations in club wage expenditures, with an explanatory power of 37.1% and 69.5% in Norway and Sweden, respectively. When examining the same relationship for a given season, this explanatory power decreases somewhat. This indicates that higher wage expenditures contribute to better league standings over time than for just a single season. Although we detect a significant relationship between these variables, the observed relationship is weaker than what previous studies have discovered. The explanatory power is considerably lower than what Gammelsæter and Ohr (2002) find in their study of Tippeligaen during the period from 1997 to 2000.

One possible reason for the above findings might be that we include the top two divisions in both countries. In both the OBOS league and Superettan, the competition is more even than in Tippeligaen and Allsvenskan. By this, we mean that the variation in wage expenditures is far less in these divisions, compared to Tippeligaen and Allsvenskan. Although wage expenditure variations are smaller in these second-tier divisions, the variation in league standings is identical in all four divisions. Another possible explanation of the Norwegian results is the end of Rosenborg's reign in Norwegian football during the 1990s and early 2000s. From the 1992 season to the 2004 season, Rosenborg won Tippeligaen each and every year, as well as delivered relatively strong results in the Champions League. Gammelsæter and Ohr (2002) conduct their survey during this period, and their results may have been influenced by Rosenborg's dominance. During the four-year period in this study there have been three different league champions, including Strømsgodset, a club which during its championship season, only had the sixth highest wage expenditures.

6.2. Can clubs with low wage expenditures achieve sporting success?

In addition to Strømsgodset, there are also several other clubs that performed consistently well during this period, despite relatively low wage expenditures compared to competitors. Haugesund, Tromsø and Odd are examples of clubs which all had lower wage expenditures than the league average. These clubs had an average final league standing in Tippeligaen of 5.5, 6 and 6.75, respectively. Viking, Brann and Lillestrøm are clubs that, in turn, have had among the highest wage expenditures, but have only had modest average final league standings of 7.5, 7.75 and 10.5, respectively. In Sweden we find no examples that are equally clear.

6.3. Cup results and the luck factor

Next, we will discuss the cup results and the role of the luck factor. In 2012 the Adecco league club Hødd won the cup final in Norway. But do smaller clubs with low wage expenditures really overperform in the cup? When we examined the correlation between wage expenditures and cup results, we initially found a weak explanatory power. In both Norway and Sweden, only 7% of the variations in cup results could be explained by wage expenditures. This indicates that a given season the clubs' wage expenditures almost do not matter at all (only 7%) in terms of their cup results. Such a weak explanatory power can be explained by three factors. First, it is possible that the larger clubs, based on wage expenditures, prioritize league matches over cup matches. In addition, the cup could mean relatively more for the smaller clubs, since the cup provides a rare opportunity for higher spectator attendance and higher revenues on match days. Secondly, it may be that the larger clubs underestimate their weaker opponents in cup matches, do not field their best players, or simply underperform due to low motivation. The last explanation is that the cup does not allow a club to recover from a single poor match performance. In the Norwegian league competition, clubs have 30

matches to accumulate as many points as possible, which allows the larger clubs to recover from having one “bad day” and let the law of averages work in their favor over the course of season of 30 matches. In the cup, however, a 90-min poor performance could cause the club to get knocked out.

The last explanation in the section above is also supported by the results for the clubs’ average performance over the four-year period. During this period, the clubs’ wage expenditures could explain 20% of the variation in the cup results. This figure is double that of the result with annual observations. This indicates that those clubs with higher wage expenditures, compared to their competitors, will perform better in the cup over time. If a big club experiences an early exit in the cup one year, players could be extra motivated and better prepared in the following year. Viewed over several years, the luck component of the cup competition will become relatively less important.

6.4. Wage expenditures and supporter expectations

We also assess the clubs’ performance based on the utilization of spectator capacity at home matches. The analysis that take into consideration how the clubs’ spectator attendance figures are influenced by wage expenditures, reveals a correlation of about 20%. The results vary little between the different datasets. The lowest explanatory power between these variables is for annual observations from Sweden (18.9%). The highest explanatory power is for Swedish clubs with average numbers (20.7%). Thus, we can say that the variations in club wage expenditures explain about 20% of the variations in the clubs’ spectator attendance, regardless of whether we look at a given season or over the four-year period.

However, we are still uncertain as to whether we can actually assert that there is a direct correlation between wage expenditures and the clubs’ spectator attendance. It is possible that clubs with high wage expenditures create higher expectations among their supporters. Supporters may expect the club to perform well since the club apparently has the financial muscles to attract high-quality players, and therefore they are drawn to the football arenas. This assumption partially contradicts our argument of measuring spectator attendance via capacity utilization, but it is not unreasonable. Another argument for why there is a direct correlation between wage expenditures and spectator attendance is that higher wage expenditures tend to be associated with better and more attractive players. If a club has strengthened its player squad with high-profile players, this can help attract fans. However, we believe that wage expenditures only have an indirect impact on spectator attendance. This claim is supported by the results for the second research question.

6.5. Bandwagon supporters

When we investigate how league standing coincides with spectator attendance, we discover that there are differences between Norway and Sweden. For a given season in Norway, we find that the variation in the clubs’ spectator capacity utilization could be explained by the variation in league standings, with an explanatory power of 41.2%. When we look at this relationship over the observed four-year period, the explanation power increases to 45.5%. In Sweden, we find a slightly lower explanatory power: 28% for annual observations and 27.2% for the average figures.

These results show that the clubs’ league standings play a role in determining whether fans choose to attend matches or not. In Norway, there is a stronger correlation between league standings and spectators’ willingness to attend matches than in Sweden. The differences between countries may be due to a larger share of bandwagon supporters in Norway than in Sweden. Nevertheless, these findings show that when clubs perform well in the league competition, more tickets are sold.

We also believe that the clubs’ results in cup competitions could help attract spectators. The analysis shows that for one season the variation in clubs’ cup results explains 12% of the utilization in spectator capacity in Sweden compared with only 4.7% in Norway. When we examine these relationships based on the average performance of the clubs, we find a significant increase in the explanation power. During the observed four-year period, the variation in the cup results explains 24.9%

of the variation in the Norwegian clubs' capacity utilization. For the Swedish clubs this explanatory power is 33.7%.

These findings indicate that the clubs' cup results in a given season do not significantly affect the supporters' likelihood of attending matches. This means that supporters' inclination to attend matches does not necessarily change, even though the club performs well in the cup in the current season. On the other hand, the clubs' cup results may affect the fans inclination to attend matches more when viewed over time. This indicates that clubs performing well in the cup over time, tend to attract more fans to their matches. Success in the cup could foster a strong emotional connection with the club, which in turn, could increase their loyalty to the club.

Our findings indicate that the spectator attendance figures of the clubs, and thus their capacity utilization, are mainly influenced by the sporting success. This is based on our argument about using spectators as a measure of the clubs' sporting success. Nevertheless, it is not clear that it is relevant to analyze how this performance variable is affected by the clubs' wage expenditures. Thus, we suggest that there could be a more direct relationship between spectators and sporting success, rather than the clubs' finances. Against this background, we argue that it may be more appropriate to examine this relationship based on an extended model. Initially, we suggested an A-B relationship between wage expenditures and spectator attendance, where wage expenditures (A) affected the club's spectator attendance (B). After carrying out this study, we believe that an A-B-C relationship may be more realistic. Therefore, we suggest that wage expenditures (A) affect the clubs' sporting success (B), which in turn affects their spectators attendance (C).

7. Conclusions

7.1. Main findings

With respect to the first research question, we find that there is a significant correlation between wage expenditures and the sporting success measured in terms of final league standing and results in cup competitions. However, we find that the correlation between wage expenditures and final league standing is stronger than the correlation between wage expenditures and cup success. We also find a significant correlation between wage expenditures and spectator attendance. With respect to the second research question, we find that there is a correlation between league standing/cup results and spectator attendance.

The findings reveal some interesting differences between the countries. For example, wage expenditures have stronger explanatory power in Sweden than in Norway. In Norway the relationship is quite weak compared to studies carried out in other countries, and also the previous study carried out in Norway by Gammelsæter and Ohr (2002). Generally, our findings indicate that wage expenditures seem to have a smaller impact on sporting success in Norway and Sweden than in the bigger European leagues (e.g. England, France, Germany, Italy and Spain).

7.2. Contributions

The study contributes with new insights into the economics of football in Norway and Sweden, which only to a limited extent has been examined and discussed in previous research. We examine the relationship between wage expenditures and different measures of sporting success. While previous studies focus on success only in league competitions, we attempt to measure sporting success in three different ways (league results, cup results and spectator attendance).

In our view, the current study has several strengths. First, our study is based on an extensive data material, including observations from four seasons in Norwegian and Swedish football. We also base the analysis on the same set of clubs throughout the four-year-period. By studying the top two divisions in both countries, we also include clubs with higher wage expenditures than some top-division

counterparts. The Swedish club Hammarby is an illustrative example. Despite the fact that the club was in the Superettan during this period, the club had wage expenditures comparable to those found in Allsvenskan.

7.3. Limitations and future studies

Our current study also has some limitations, which means that some caution should be exercised when interpreting the results. For example, we lack data for some clubs in Norway. There is also some uncertainties related to some of the variables, such as Norwegian wage expenditures (due to complicated company structures) and attendance figures (due to the season ticket holder issues).

Keeping in mind these limitations, the study can be expanded in different ways. For example, researchers could gather primary data directly from the clubs. In this study we experienced some data accessibility problems. For example, some clubs were more willing to share such information than others. Similar observations have recently been made in another study, where the authors find that some Norwegian clubs are not willing to share data about their wage expenditures (Arenberg & Hvamstad, 2016).

Another extension of this study would be to make use of data covering an extended period of time. For example, football-related data may be affected to some extent by structural changes (e.g., in terms of league structure) and cyclical economic changes. Such external factors threaten the validity and reliability of data covering a short time-period. Moreover, the relationship between wage expenditures and sporting success will probably be stronger over the long term (e.g. over a 10-year period).

A third extension would be to include data from more recent years than the period covered in the current study (2010–2013). Recently, Rosenborg and Malmö have reemerged as the two dominant clubs in Norway and Sweden, respectively (Rosenborg league winners in 2015, 2016, 2017; Malmö league winners in 2013, 2014, 2016, 2017). Therefore, it can be argued that the two leagues have moved away from a period of being relatively unpredictable to leagues with a dominant club. Future research could examine these developments and their implications in greater detail.

A fourth extension would be to look into the operationalization of sporting success. It could be appropriate to look at the relationship between other variables and sporting success than the relationships studied in the current paper. For example, one possibility would be to look at how training facilities, coaching skills, and the player group's age distribution are related to sporting success. Finally, we can also mention that it could be fruitful to employ a case study approach in order to dig deeper into alternative explanatory variables and contextual factors. For example, one possible question would be to explore why some clubs are able to perform well despite low wage expenditures.

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