THE CONCEPT OF DATA-DRIVEN JOURNALISM IN FOOTBALL: A CASE STUDY OF THE CHAMPIONS LEAGUE TOURNAMENT

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The rapid development of information and communication technologies has led to significant changes in the media field, as in every other area, and has brought about new opportunities. Traditional media forms - radio, television, and print journalism - have entered a new qualitative stage, while media specific to the virtual environment has also emerged. Visualization, considered as a component of Data-Driven Journalism, stands out as the most crucial point. In other words, the researcher must visualize the result obtained from the data being analyzed in an understandable way so that everyone can comprehend it easily. In this article, the data of clubs competing in the UEFA Champions League, considered the most prestigious club tournament in the European continent according to Kaggle, has been analyzed (from the 2011-12 season to the group stage of the 2021-22 season). The infographics produced with the obtained results have been prepared in a comprehensible manner for everyone. In the 21st century, articles written using data published by various platforms, both paid and free, help fill gaps in the literature and inform those interested in Data-Driven Journalism in a short period.

Keywords: Data-Driven Journalism, Champions League tournament, Football

INTRODUCTION

The advancement of technology in the modern age is influencing society and its lifestyle. Open changes and rapid flow of information are leading to the development of Data-Driven Journalism, which is updated day by day [1]. Thus, there is now a need to evaluate and research these innovations. Different questions arise: how can I acquire information in this field of science, namely Data-Driven Journalism? Are openly available data positive in terms of understanding information?

Open data refers to data that is freely accessible, usable, modifiable, and shareable by anyone for any purpose. Easy access to data by everyone is made possible at the expense of various institutions, ministries, and especially governments. For the development of Data-Driven Journalism, the disclosure of data on various topics is particularly important [2-4]. This branch of journalism has emerged with technological equipment and distinctive programs. Data journalism refers to practicing journalism with data. In other words, it involves perceiving what people need from an infinite amount of data. This actually requires serious research skills and abilities.

The British Guardian newspaper, through its Guardian Data Blog section, aims to reach certain conclusions using numbers in its news articles. It is known to cover data mining-related courses in many communication schools. While Data Journalism aims to merge journalism with computer skills, it also facilitates the use of visualization practices to enhance the understanding of numbers in news articles as a byproduct. Such applications can be easily produced using various free tools [5, 6]. For example, in a news article on the Guardian Data Blog about the first-round voting distribution in the Brazilian presidential elections, an interactive map of Brazil was added to speculate on the possible outcome of the next round. Consequently, Data Journalism seems to serve the purpose

of making visualization and numbers more understandable in countries where data is not readily available. To create such an interactive map, all you need is a file containing voting distributions in all cities. When you upload the file to the Silk application, the interactive map is automatically generated within a few minutes.

MAIN PART

Subject of the Research

Football has become more widespread and popular compared to other sports. In addition to leagues and cup competitions in different countries around the world, there are also world championships and continental tournaments.

Football teams representing both developed and developing countries in Europe compete for championships in various tournaments on the continent. One such competition is the UEFA Champions League. The main topic of the article is the use of data in football and the preparation of various infographics based on them.

The Purpose of the Research

The advancements in science and technology that gained momentum in the 20th century have continued into the 21st century, and with the impact of globalization, these developments have become pervasive across all countries. Significant developments have occurred in the field of technology, driven by military, economic, and political reasons. Factors such as the decreasing cost of computers and the increasing prevalence of communication networks have led to the dominance of digitization in all processes from the economy to everyday life.

The increase in data production and the widespread adoption and cost reduction of technological developments required for data processing have also facilitated the transformation of this data into information. Particularly in this study, the purpose of examining the Champions League tournament is due to the abundance of accessible data.

Sample of the Research

The sample of the research consists of data from the 2011-12 season to the group stage of the 2021-22 season.

Methodology of the Research

In the theoretical part of the study, a literature review was conducted. In the practical part, the data of clubs competing in the UEFA Champions League, considered the most prestigious club tournament in the European continent according to Kaggle, (from the 2011-12 season to the group stage of the 2021-22 season) were filtered through the OpenRefine 2018 program, and the obtained results were visualized using Canva and Adobe Photoshop 2021 tools.

Infographics and Assessment

After filtering the data of clubs competing in the UEFA Champions League, considered the most prestigious club tournament in the European continent according to Kaggle, (from the 2011-12 season to the group stage of the 2021-22 season), infographics were prepared regarding the teams competing in the football leagues of five countries (Germany, France, England, Spain, Italy)[1] Figure 1.

After analyzing the data, it was determined that Germany has been represented by 29 clubs in the UEFA Champions League from the 2011-12 season to the group stage of the 2021-22 season. Only 2 teams have managed to win the tournament (Bayern Munich 6 times, Borussia Dortmund 1 time).

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[1] **Important NOTE:** The names of the countries are written in alphabetical order.

Fig. 1. Infographic on Bundesliga (Germany) teams competing in the UEFA Champions League from the 2011-12 season to the group stage of the 2021-22 season

Bayern Munich, having participated in the tournament 38 times, has played 372 matches and achieved 221 victories. Borussia Dortmund has participated in the competition 20 times and won 78 out of 162 matches.

Bayer 04 Leverkusen has achieved 42 victories, 24 draws, and 45 defeats in the Champions League tournament. FC Schalke 04, which is currently competing in Bundesliga 2, also has a history in Europe's number one club tournament. They have had the opportunity to participate in the Champions League 10 times, obtaining 31 victories, 18 draws, and 28 defeats.

The reason for including information about only 4 clubs in the prepared infographic is that they have demonstrated more successful performance in the tournament. The primary goal of Data-Driven Journalism is to highlight the most important information. Therefore, focusing on the clubs that have achieved significant success in the tournament helps to emphasize key insights and trends.

Fig. 2. Infographic on Ligue 1 (France) teams competing in the UEFA Champions League from the 2011-12 season to the group stage of the 2021-22 season.

After filtering, it was determined that 17 clubs have represented France in the UEFA Champions League from the 2011-12 season to the group stage of the 2021-22 season Figure 2. Among these 17 teams, only Olympique de Marseille had once been regarded as one of the strongest clubs in Europe. Despite PSG's lavish spending on transfers, they have not been able to win the Champions League gold medal. FC Girondins de Bordeaux, which is included in the infographic, is currently competing in Ligue 2.

Fig. 3. Infographic on Premier League (England) teams competing in the UEFA Champions League from the 2011-12 season to the group stage of the 2021-22 season.

After analyzing the data, it was determined that 17 clubs have represented England in the UEFA Champions League from the 2011-12 season to the group stage of the 2021-22 season Figure 3. Among the clubs mentioned in the infographic, Liverpool has won the most Champions League titles among English representatives.

Manchester United has continued its inconsistent performance in the Champions League after the end of Sir Alex Ferguson's managerial career. However, the Red Devils are still the second most successful English club in the tournament. Chelsea is known as the most successful club in the Champions League among London clubs. They have won the tournament's gold medals twice. Although Arsenal has qualified for the tournament 21 times, they have not been able to achieve championship glory.

Following the appointment of Spanish expert Pep Guardiola, who is currently considered one of the world's best managers, as the manager of Manchester City, significant developments were observed in the team. The team won consecutive championships in the Premier League. After winning the English Premier League and the FA Cup in the 2022-23 season, Manchester City also won the UEFA Champions League, completing the season with a "treble." Continuing their momentum in the new season under the leadership of Pep Guardiola, the team also won the UEFA Super Cup and the FIFA Club World Cup, cementing their place in football history. It should be noted that the infographic states that Manchester City has not won the UEFA Champions League gold medal. This is because the data analyzed covers the period from the 2011-12 season to the group stage of the 2021-22 season. From the 2011-12 season to the group stage of the 2021-22 season, 14 clubs have represented Spain in the UEFA Champions League Figure 4. Real Madrid holds the title of the club with the most championships in tournament history (14 times). The team, which also included Turkish footballer Arda Güler, continues its campaign in the Champions League in the 2023-24 season. After Argentine footballer Lionel Messi's departure from Barcelona, the team began to perform poorly. It is true that strong players were eventually transferred to the team, and trophies were won. Barcelona is known as the club with the most Champions League victories in Spain, following Real Madrid. Turkish-German national footballer Ilkay Gündoğan plays for the Barcelona team.

Although Atletico de Madrid has not won the gold medal in the Champions League, it has achieved success in the Europa League. However, since the focus of the article is on the Champions League, these details have not been included. The team representing the capital city of Spain, Madrid, reached the finals of the Champions League in 2014 and 2016 but was defeated by Real Madrid. Arda Turan, one of the talented footballers produced by Turkish football, was once an important figure for Atletico Madrid. Çağlar Söyüncü is currently playing for the team representing the capital city but is struggling to find playing time due to failing to meet expectations.

Fig. 4. Infographic on La Liga (Spain) teams competing in the UEFA Champions League from the 2011-12 season to the group stage of the 2021-22 season.

Fig. 5. Infographic on Serie A (Italy) teams competing in the UEFA Champions League from the 2011-12 season to the group stage of the 2021-22 season.

After filtering the data used in the implementation part of the study, it was determined that 16 clubs have represented Italy in the UEFA Champions League from the 2011-12 season to the group stage of the 2021-22 season Figure 5.

Among the Italian clubs, AC Milan is the team that has won the Champions League the most. Although Juventus has had more opportunities to participate in the tournament, they have only won the cup twice. Another representative from the city of Milan, FC Internazionale, has been awarded the gold medal three times in the UEFA Champions League tournament, in which they participated 23 times. They had the chance to become the strongest in Europe for the 4th time in the 2022/23 season. However, Manchester City denied them this opportunity in the final match held in Turkey. AS Roma, the capital club, has never won the Champions League.

CONCLUSION

From past to present, data has become one of the most crucial elements of our daily lives. Whether we are aware of it or not, we encounter data in many aspects of our daily lives. The fact that many things are expressed in numbers nowadays has increased the interest in the digital world. Therefore, data journalism has emerged, which highlights the importance of data and revolves around processing data with a journalistic approach.

Data journalism points to the investigative journalism activity that has gained importance with the emergence of new tools and applications in communication technologies. This form of journalism has gained prominence with the publication of leakage documents such as Wikileaks, Panama Leaks, Swiss Leaks, and Luxemburg Leaks, and the presentation of the data in these documents within the framework of journalism. Moreover, data journalism represents a transparent and accountable journalism approach. This researcher journalism activity, which combines scientific and artistic methods, is important in terms of adding news sources to news files, revealing hidden information among data sets, and addressing issues such as wars, migration, health, education, and government expenditures that are important for societies.

Data journalism operates on the principle of presenting information that is critical for societies and awaiting exposure in a manner that everyone can understand and benefit from. In line with this principle, it is crucial for data journalism processes to be carried out successfully. Especially after collecting and analyzing data, it is important to visualize and present the information in a form that everyone can understand and benefit from.

There are many data visualization methods and news presentation formats that can be used to convey the information obtained through data journalism. One of the news presentation forms that can be used in storytelling processes is infographic news design. Infographic design is highly important for effectively and easily presenting information obtained through journalistic processes using data visualizations. In this context, the study focuses on infographic news design and aims to outline the principles of infographic news design for effective and easily understandable news presentation.

The study's first section delved into the concept of data, data mining, and big data on a conceptual level. The second section conducted a literature review on data journalism. The third section provided information about the UEFA Champions League tournament. The fourth section constituted the research process. In this process, data was collected, filtered, infographics were prepared, and they were evaluated.

Some of the ideas that emerged from the prepared infographics include[2]:

- Among German football clubs, only Bayern Munich and Borussia Dortmund have managed to win the tournament.
- FC Schalke 04, currently competing in Bundesliga 2, also has a history in Europe's top club tournament.
- Among the clubs representing France in the tournament, only Olympique de Marseille was once considered Europe's strongest.

Time period covered by the data: From the 2011-12 season to the group stage of the 2021-22 season.

- FC Girondins de Bordeaux, featured in the infographic, currently competes in Ligue 2.
- Manchester United is the second most successful English club in the Champions League.
- Chelsea is recognized as the most successful club in the Champions League among London-based clubs.

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[2] **Tournament name:** UEFA Champions League
- The infographic indicated that Manchester City did not win the Champions League gold medal in the 2022-23 season.
- Real Madrid holds the title of the club with the highest number of championships in tournament history.

- Barcelona is known as the club that has won the UEFA Champions League the most after Real Madrid in Spain.
- Atletico Madrid reached the final of the Champions League in 2014 and 2016 but was defeated by Real Madrid.
- AC Milan is the team with the most Champions League victories among Italian clubs.
- Another Milan-based representative, FC Internazionale, has been awarded the gold medal three times in the UEFA Champions League tournament in its 23 participations.
- Among English representatives, Liverpool has won the most Champions League titles.

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FUTBOLDA VERİLƏNLƏR BAZASINA GÖRƏ JURNALİSTİKA KONSEPSİYASI: ÇEMPİONLAR LİQASI TURNİRİNİN NÜMUNƏSİNDƏ

R.Z. Gülməmmədov

İnformasiya-kommunikasiya texnologiyalarının sürətli inkişafı hər bir sahədə olduğu kimi, media sahəsində də mühüm dəyişikliklərə səbəb olaraq, yeni imkanların açılmasına səbəb olub. Ənənəvi media formaları - radio, televiziya və yazı jurnalistikası yeni keyfiyyət mərhələsinə qədəm qoyub, bununla bərabər virtual mühitə xas media da yaranıb. Məlumata əsaslanan jurnalistikanın tərkib hissəsi hesab edilən vizuallaşdırma ən mühüm məqam kimi önə çıxır. Başqa sözlə desək, təd-qiqatçı təhlil edilən məlumatlardan əldə etdiyi nəticəni hər kəsin asanlıqla qavraya bilməsi üçün ba-şa düşülən şəkildə vizuallaşdırmalıdır. Bu yazıda Kaggle-a görə Avropanın ən nüfuzlu klub turniri sayılan UEFA Çempionlar Liqasında mübarizə aparan klubların məlumatları (2011-12 mövsümün-dən 2021-22 mövsümünün qrup mərhələsinə qədər) təhlil edilib. Əldə edilən nəticələrlə hazırlanan infoqrafika hər kəs üçün anlaşıqlı şəkildə hazırlanıb. 21-ci əsrdə həm ödənişli, həm də pulsuz müx-təlif platformalar tərəfindən dərc edilən məlumatlardan istifadə etməklə yazılan məqalələr ədəbiy-yatdakı boşluqları doldurmağa kömək edir və Data-Driven Jurnalism ilə maraqlananları qısa müd-dətdə məlumatlandırır.

Açar sözlər: *Data-Driven Jurnalistika, Çempionlar Liqası turniri, Futbol*

КОНЦЕПЦИЯ ДАННОЙ ЖУРНАЛИСТИКИ В ФУТБОЛЕ: ПРИМЕР ТУРНИРА ЛИГИ ЧЕМПИОНОВ

Р.З. Гюльмамедов

Быстрое развитие информационных и коммуникационных технологий привело к значительным изменениям в сфере СМИ, как и в любой другой сфере, и открыло новые возможности. Традиционные формы СМИ – радио, телевидение и печатная журналистика – вышли на новый качественный этап, одновременно появились и СМИ, специфичные для виртуальной среды. Визуализация, рассматриваемая как компонент журналистики, управляемой данными, выделяется как наиболее важный момент. Другими словами, исследователь должен визуализировать результат, полученный из анализируемых данных, в понятной форме, чтобы каждый мог легко его понять. В статье проанализированы данные клубов, выступающих в Лиге чемпионов УЕФА, считающейся самым престижным клубным турниром на европейском континенте по версии Kaggle (с сезона 2011-12 до группового этапа сезона 2021-22). Инфографика, созданная на основе полученных результатов, подготовлена в понятной для всех форме. В XXI веке статьи, написанные с использованием данных, опубликованных на различных платформах, как платных, так и бесплатных, помогают за короткий период заполнить пробелы в литературе и информировать тех, кто интересуется журналистикой, основанной на данных.

Ключевые слова: *журналистика, управляемая данными, турнир Лиги чемпионов, футбол.*