

**Competitive Balance in eSports: A Comparison Between
Open and Closed Leagues**

by

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Abstract

Between the 2010s and 2020s, many eSport leagues were created in the spike of popularity for video gaming, capitalizing on the newly populated community of gamers. For these leagues to be a success, matches amongst professional teams must be competitive to ensure fans are entertained. To understand the competitive nature of eSports, I analyze the league structure of the game League of Legends in NA (LCS) and EMEA (LEC) regions between 2013 and 2024, focusing on the switch from open to closed formats, comparing the competitive balance before and after franchising. The results show that the switch to closed leagues increases the within-season balance in both the LCS and LEC. However, the between-season balance has only shown improvement in the LCS and the opposite effect for the LEC.

Table of Contents

Introduction.....	4
Literature Review	8
Esport Growth in Relation to Social Media and Streaming	8
Recognizing ESports as a Sport	9
Competitive Balance and Sport League Structure	10
The ESport Approach to League Formats	12
Method	13
Data	15
Results	17
Conclusion	23
Limitations	25
References	27

Introduction

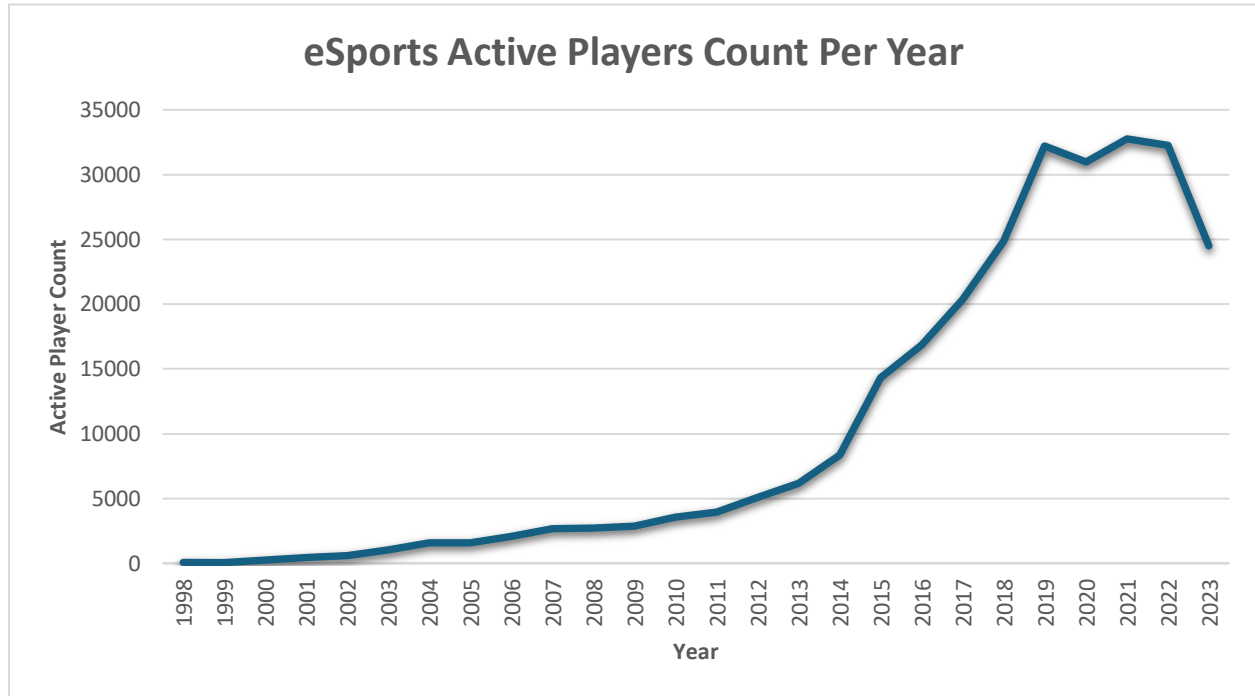
Between the 2010s and 2020s, videogaming, streaming, and other forms of online entertainment have become exceedingly popular world-wide. This boom in demand for online entertainment is largely due to the advancement of the internet and technology. Rather than consuming traditional media, people choose to consume media/entertainment on online streaming services such as YouTube, Netflix, Hulu, Twitch known as “digital media”. The combination of changes in consumer preferences and enhanced quality of content brews an age of the internet offering opportunities for online careers not commonly seen before.

One of the many careers that arose from this digital age is professional and competitive video gaming in a field called eSports also known as electronic sports. In eSports, individuals or teams of professional gamers compete in gaming tournaments structured similarly to traditional sports. Tournaments are set up by game publishers or third-party organizations with the goal of creating an entertaining and tactical show for fans which is not seen through the casual gaming experience. These tournaments are largely funded by investors and the gaming community. Teams of gamers also known as eSports organizations are incentivized by large cash prizes, trophies, and online renown.

Emerging as a large and growing market for people to watch their favorite games in a more competitive and organized setting, the rise of the eSport industry in the 2010s is often called a phenomenon. Gaming both online and offline has over the years evolved from a pastime or hobby to something more ingrained into the lifestyle of the younger generation(s). Since gaming has become more normalized in society, the number of people playing video games both casually and competitively has increased. Graph 1 displays the growth of active competitive eSports players from 1998 to 2023. This graph highlights the growth of video gaming and its viability as an actual profession. Between the years 2010 and 2020, the number of players has

risen from 3,543 in 2010 to 30,976 in 2020, supporting the idea of the eSports phenomenon.

Graph 1. Number of Active eSports Players per Year



Following the large increase in competitive players and therefore the labor market of the eSports industry, the income and prize revenue earned by being a professional video gamer increased dramatically in the same time span. Graph 2 displays the overall growth and popularity of eSports by looking at the total prize earnings from 1998 to 2023. With the growth and popularity of gaming on the rise, investors and companies are more likely to fund more gaming tournaments with bigger prize pools.

Graph 2. Total eSports Prize Earnings per Year



Although the audience is there for online gaming, the creation of profitable eSports leagues and teams is not as easy it may seem. ESports organizations require costly resources such as players, coaches, equipment, and facilities. Teams gain revenue from prize money, sponsorships, advertising merchandise, and streaming/broadcasting games. These streams of revenue may still not be enough to cover the costs of creating and managing an eSport organization for long periods of time.

ESports leagues and tournaments also have a role in determining the success of eSports teams. ESports leagues and tournaments give platforms for organizations to perform and compete for large cash prizes and interact with the gaming community. For eSports organizations to cut losses and plan to succeed in the long run, placing high in tournaments is optimal to bring in fans and revenue to the organization. Given that leagues and tournaments are essential platforms for organizations, their format and structure play a pivotal role in how teams behave and prioritize their spending.

Similar to traditional sports are two main league formats implemented in eSports leagues, closed franchised leagues and open promotion/relegation leagues. In franchise leagues, teams must buy their spot within the league which results in costly barrier of entry. While promotion/relegation leagues are comprised of tiers where the best team(s) from each tier moves up, while the worst team(s) from each tier drops down. The problem that arises from this format is that teams who are relegated from their higher tiered league will suffer from a decline in broadcast time, losing revenue they would get from advertisements and sponsorships.

League structure and formatting have an impact on the competitive nature of the league. This is important because competition drives fan interest, which will provide higher streaming numbers and revenue for the league and teams. Because teams lose much of their revenue after demotion in open league formats, teams have high incentives to win games which will increase competition. Teams in second-tier leagues also have a strong incentive to win to significantly increase their revenue by promoting to the first-tier league. The introduction of new teams into first-tier leagues also could drive between season competition. This is the opposite of teams participating in closed league formats. In closed leagues, teams have the choice to either maximize wins or maximize profits. Since there is no relegation, teams face no concern about losing revenue from poor league standing and relegation, they have less incentives relative to open league formats to compete or win.

As eSports is still a growing industry, competing against traditional sports in terms of entertainment, leagues and teams must be sustainable in the long run. The purpose of this paper is to understand and examine the effect of open and closed leagues on the competitive balance of eSports. With this knowledge, it could give a better understanding of the future of eSports and what eSports leagues can do to provide more stability to the industry. To do so, I will look at different eSports league models for the game League of Legends (LoL), specifically looking at team success in the North American League (LCS) and the EMEA (Europe, Middle East, Africa)

League (LEC) before and after the leagues began franchising to see whether the league was competitive dependent on the format.

Literature Review

Esport Growth in Relation to Social Media and Streaming

In the discussions of sport economics, the business and market of eSports is still a relatively new topic. Its unprecedented growth during the last decade alone has made it a noteworthy talking point with many implications for the future of the entertainment industry, specifically within sports.

The development of technology, globalization, and the switch from traditional media are found to be some of the reasons why the eSports industry was able to grow to such an extent (Saiz-Alvarez et al., 2021). The internet and its availability through computers and other devices such as phones strengthen the interconnection of people around the world. Thus, people are better able to find sources of entertainment, create communities, and share thoughts with others. With many more people having access to the internet, people have also decreased the use of traditional media such as television, newspapers, and radio in favor of social media.

Social media is made up of online platforms which facilitate online interactions through posting and sharing content. Through these platforms, many individuals found success being able to market themselves and what they do online to large numbers of consumers/fans calling themselves streamers, content creators, or influencers.

Much like online content creators, many eSports' organizations and leagues use streaming and online platforms to market themselves to a wider audience while also gaining viewers interested in competitive gaming. Lehnert et al. (2022) observed that much of the growth of eSports is due to the marketing from content creators and the expansion of streaming as entertainment. This is prevalent in the years 2019 to

2022, during the COVID-19 pandemic which saw massive growth in both streaming viewership and eSports global market revenue (Block & Haack, 2021). With such massive growth involving streaming, the market for online competitive gaming becomes more attractive to investors which enables the growth of both teams and leagues within the eSports industry.

Although being on streaming platforms has benefited eSports organizations and leagues, it also must deal with some of the problems associated with social media and streaming. Considering how streaming services such as Twitch or YouTube allow creators to enter and exit as much as they please, competition on these platforms poses an issue for those wishing to profit from the large growth of streaming. Leaving the mainstream platforms would lead to large drops of viewership and this proves to be problematic for eSports which still compete for consumer attention against non-competitive and non-gaming related streams (Watanabe et al., 2021). This problem highlights an important role in streaming platforms in the marketability of the eSports industry.

Recognizing ESports as a Sport

Before looking at eSports can benefit from similar structures as traditional sports, I must first address the connection between eSport and traditional sport. There is much debate about the fit of competitive gaming in the world of sports. Many found gaming to be unhealthy which was against the core belief that sports are a healthy activity (Tjønndal, 2021). Previously, gaming was known as a recreational activity with little to no physical involvement but in recent times has only become more competitive and competing at high levels requires the use of motor skills like traditional sports. The high skill requirement along with competition separates normal gaming as a recreational activity from what is known as eSports. Białecki et al. (2022) introduces an expanded definition of sports which categorizes activities into sports as a function of signals and environments. Using this definition, the use of

precise thinking, reactions, movement, and coordination used in gaming in a competitive environment would classify eSports as a sport.

Looking at the consumer level, understanding the consumers is an important way in determining the similarities between traditional sports and eSports. Sports overall are a form of competitive entertainment for spectators. From a study conducted by Pizzo et al. (2018), there were large amounts of similarities between why consumers watch traditional sports to eSports. Comparing viewership and attendance of soccer (football) and two competitive eSports games, one being sports-themed and the other being a non-sports game, in Korea. The main finding that motivated viewers to watch was a player's or athlete's skill. In watching a competitive sport many found that what made a sport was how skilled an individual was and how they compete against other similar highly skilled individuals.

Competitive Balance and Sport League Structure

Sports leagues follow two main structures: open or closed league models. Open leagues are usually found in Europe and in sports such as soccer (football) and closed leagues are predominantly found in the United States in sports such as basketball, baseball, and American football. It is a long-standing debate to determine which league format is better for sports leagues to utilize in order to obtain the optimal welfare for both teams and fans. There are many pros and cons to each format, and it is difficult to test the difference between the two since sports league tend to stick to one.

The main aspect of open sports leagues is that they allow for promotion and relegation. Promotion and relegation alone change how teams operate and play out their season. Teams in open league models will usually play in effort to win games and avoid loss in team revenue from relegation (Szymanski et al., 2010). Team revenue in open league models is inconsistent from team to team. Teams with higher

revenues usually were teams that had more success, either in the past or participating in regional tournaments. The most consistent stream of revenues open league teams will make is from sharing broadcasting revenue. To maintain their share of broadcast revenue, open league teams must maintain their position in the highest tiered-league possible to get as much attention and views as possible. Relegation makes this a problem for many teams as demoting them to a lower league would decrease broadcast revenue.

Winning games to avoid relegation has many implications for teams in this system. Teams must spend much more money on players to increase their team's performance and quality (Jasina & Rotthoff, 2012). Consumers benefit from this spending since it enables teams to buy players and better their teams to compete, but conversely, teams may suffer because it becomes very costly to buy skilled players. If the team loses or falls to a lower tier while spending money on players, it could jeopardize the future of their organization.

Closed Leagues are classified by their limited team slots. In this league format, teams hold monopolistic power, usually not having to compete with other teams for a local market. Teams in closed leagues systems also behave differently from open league systems since there is no fear of relegation in closed sports leagues. Closed league teams can behave by either maximizing profits or maximizing wins, but open league teams are pressured to maximize wins. Teams generate revenue through ticket sales, licensing, sponsorships, broadcasting, and venue related sales. Since teams can choose to maximize their profits, then there is less incentive to win and spend money on players, decreasing the overall competitive balance within the league (Noll, 2003).

This system is more beneficial for the teams and organizations since they will be generating more revenue but can prove problematic on the topic of competitive balance since there is no additional competition from new teams entering the league. However, studies from Rugby leagues suggest that closed leagues can offer more competition than open league (Read et al., 2021). Some issues regarding competitive

balance in closed leagues are solved using mechanisms such as better income redistribution, the ability to draft upcoming talent based on team standing, and salary caps which enable lower performing teams a chance to compete with better teams in the league (Andreff, 2019).

The ESport Approach to League Formats

Although there is very little to no research done on the topic of eSports and competitive balance, it serves as one of the small instances of when a sports league changes its format from open to closed league. The relative age and growth of eSports compared to traditional sports has allowed league organizers to try different options in order to perfect and attract fans. Most eSports leagues use open league models just like European sports in order to cultivate new talent and increase competition. Popular eSport games such as CS:GO, Rocket League, and DOTA 2 have adopted open league formatting. There are also notable video games in the eSports industry which are known for their use of closed franchise leagues such as the Call of Duty League and the Overwatch League.

Some games, however, chose to switch between or create a hybrid of the two formats, shifting the landscape and possible future of the eSports industry. The game being referred to is called League of Legends (LoL). The history of LoL eSports began similarly to its video game counterpart DOTA 2, an open league for teams to promote and relegate based off performance. In this time, LoL established many eSports leagues and grew in popularity around the world, but the open league format proved ineffective in creating stability for teams and players to keep competing at a high level in some leagues such as the LCS and LEC. The switch to a closed franchise system allowed many teams to find a reliable spot in the league which stabilized salaries and saved investors from losing money when teams performed poorly.

Although each format has its own distinct concerns, the goal of sports is to create a competitive environment for teams to compete and for fans to enjoy. Using this instance of a structural change in eSports allows for a better examination and comparison of open and closed leagues. Researching the growing and changing landscape of the eSports industry can provide new and useful insights into the future development of sports leagues.

Method

To compare the eSports open and closed league formats, this study looks at the two different measures of competitive balance, a measure to calculate within-season competition and another to measure between-season competition. When calculating the competitive balance, I will be separating the LCS into the LCS before franchising (LCSBF) and LCS after franchising (LCSAF) as well the LEC into LEC before franchising (LECBF) and LEC after franchising (LECAF). Doing so will create independent league structures for the periods before and after franchising, in which the observed measures can be compared to indicate changes in competitive balance.

For the main competitive balance measure, I will be using the Noll-Scully measure (NS) measuring win dispersion. The NS quantifies the ratio between the actual standard deviation of winning percentage (ASD) and the ideal standard deviation of winning percentage (ISD). The resulting measure indicates how much the ASD differs from the ISD, describing the competitive balance of teams across the league known as within-season balance. As the measure gets closer to the value of 1, it indicates that the league is becoming more competitive. The equation for the Noll-Scully Measurement is as follows:

$$NS = \frac{ASD}{ISD}$$

The ASD describes the variation of the league's win percentage from the average winning percent within the league. This is calculated by first subtracting the

mean win percent from the winning percentage of each team (W_i), summing the squared differences. After finding the sum, it is divided by the number of teams (N) in the league and then the result is square rooted. Since the outcome of a game is either to win or lose the average win percent for each team the league will be 50%. The resulting equation looks like:

$$ASD = \sqrt{\frac{\Sigma(W_i - 0.5)^2}{N}}$$

The ISD is determined by the number of games played during each season. The Noll-Scully measure proposes that the benchmark standard deviation is when the win-loss ratio for each team in a competitive league is 50:50. Calculating the ideal standard deviation for a particular season, the 0.5 probability of winning is divided by the square root of the average number of games played (GP) due to the varying number of games for each team in a given season. The resulting equation looks like:

$$ISD = \frac{0.5}{\sqrt{GP}}$$

Using the NS measure to evaluate competitive balance, conducting an independent samples t-test is possible to compare both the LCS and LEC before and after they franchise. This test has been used in Kringstad (2021) measuring the competitive balance between men and women in sports. To compute this test, the pooled variance (s_p^2) is measured to adjust the variance, accounting for the different numbers of seasons between groups:

$$s_p^2 = \frac{((N_{bf} - 1)s_{bf}^2) + ((N_{af} - 1)s_{af}^2)}{N_{bf} + N_{af} - 2}$$

using the number of seasons before franchising (N_{bf}), after franchising (N_{af}), and the standard deviation of the NS measures before franchising (s_{bf}) and after franchising (s_{af}). Applying the pooled variance into the t-test formula, it is divided by the N_{bf} and N_{af} . The two quotients are summed together and then square rooted providing the

combined standard error (CSE). To get the t-value, the difference between the average NS before franchising (NS_{bf}) and the average NS after franchising (NS_{af}) is calculated then divided by the CSE. The full equation for the test is as follows:

$$t = \frac{\overline{NS}_{bf} - \overline{NS}_{af}}{CSE}, \quad CSE = \sqrt{\left(\frac{s_p^2}{N_{bf}} + \frac{s_p^2}{N_{af}}\right)}$$

The t-value for the independent sample t-test will indicate whether there is an actual difference in competitiveness after the leagues franchise.

The second competitive balance measure used is the Herfindahl-Hirschman Index (HHI). HHI is used to measure the concentration of firms in a market, but for the purposes of this study it will be used to measure the concentration of first place finishes throughout the history of the LCS and LEC. The HHI is calculated by summing the number of the first-place finishes (FP) by team, i , divided by the number of seasons (SP) squared. The following equation is the result:

$$HHI = \sum_{i=1}^T \left(\frac{FP_i}{SP}\right)^2$$

The importance of HHI is that it is a measure of between-season balance or team dominance, seeing how competitiveness transfers from season to season. When a single team finishes first of the league constantly over many years, it may signify that there is a lack of competition from other teams. However, as more teams begin to win first place, the competition increases. By observing the difference in HHI values between the LCSBF and LCSAF as well as LECBF and LECAF, it can reveal the direction in which competitive balance is moving towards resulting from the change in league structure.

Data

The data used in this study was collected from the LCS and LEC seasons between 2013 and 2024 using the websites: esportsearnings.com and gol.gg. Data for

the 2013 seasons of the LCS and LEC is gathered from liquipedia.net. Included in this data are the number of seasons played, wins/losses (per season), placements (final and seasonal), and tournament earnings for each team that has played in the LCS and LEC between 2013 and 2024.

The LCS became a franchise in 2018, removing its promotion/relegation system. A year later, in 2019, the LEC franchised. The pre-franchise data consists of 22 seasons with 10 seasons from the LCS and 12 seasons from the LEC. The league size for both pre-franchise LCS and LEC began with 8 teams in 2013 and increased to 10 teams in spring 2015. Post-franchise data consisted of 28 seasons with 14 seasons from both the LCS and LEC. The LCS post-franchise is made up of 10 teams from spring 2018 to summer 2023 and dropped to 8 teams during the 2024 seasons. The LEC post-franchise maintained the league size of 10 teams for all of its 14 seasons of data.

Table 1. Number of seasons and total matches in the LCS and LEC

	<i>LCS</i>			<i>LEC</i>		
	<i>LCSBF</i>	<i>LCSAF</i>	<i>Total</i>	<i>LECBF</i>	<i>LECAF</i>	<i>Total</i>
<i>Seasons</i>	10	14	24	12	14	26
<i>Games Played</i>	1387	1273	2660	1395	998	2393
<i>Unique Teams</i>	25	15		25	15	

The number of matches per season varied in the LCS and LEC due to changes in the tournament formatting and the number of teams within the league. The standard format used in the LCS and LEC is the round robin in which each team plays every other team once. Each team would also play against each other in a series format in which teams have to win a certain number of games to be declared the victor. In the LCS and LEC, the number of round robins varied as well as the number of wins needed to win a series during the regular season. For example, in the 2013 Spring season for both the LCS and LEC, each of the 8 teams in the league played

each other in a quadruple round robin, best of one format. After switching to 10 teams in Spring 2015 in both leagues, the format was changed to a double round robin, best of one format. In the LCSBF, the last 3 seasons starting in Summer 2016, the league experimented with a best of 3 format which increased the number of games from a total of 90 games in Spring 2016 to a total of 218 games in Summer 2016. The data included for this study included all games in the series, not the overall winner of the series.

For the LCS, the maximum total games played was 226 games in Summer 2017. The minimum total games played in the LCS was 65 games in Summer 2024. The maximum total games played in the LEC was 182 in Summer 2016 and the minimum was 45 games in Winter 2023, Summer 2023, and Winter 2024. Additionally, the number of games played for each team varied as well due to the occurrence of tie-breaker games which added onto the number of games played per team in a given season. Tie-breakers also affect the win rate of a team, altering the NS measure for within season competitive balance since some teams were able to 1 or 2 matches more than other teams.

Results

After conducting the independent sample t-test on competitive balance, table 2 shows the empirical results of comparing the LCSBF and the LCSAF. The average NS for the LCSBF was 1.85 (SD = 0.43) and the average for the LCSAF was 1.5 (SD = 0.24). The average shows that the LCSAF is more competitive than the LCSBF based off the deviation of winning percentage per season. The t-test reveals that there is a significant difference in the within-season competitive balance between the LCSBF and LCSAF ($t(22) = 2.59, p = 0.02$) at the 95% confidence interval. The t-test

confirms that after the league was franchised, the competition between teams in season increased.

Table 2. Independent T-test. Competitive Balance Results for the LCS

<i>Variable</i>	<i>LCSBF</i>		<i>LCSAF</i>		Δ	<i>t</i> (22)	<i>p</i>
	Mean	SD	Mean	SD			
<i>NS</i>	1.85	0.43	1.50	0.24	0.35**	2.59	0.02

Notes. *** Significant at 1%. ** Significant at the 5% level. * Significant at 10% level.

Table 3 shows the empirical results comparing the within-season competitive balance between the LECBF and LECAF. The average NS for the LECBF is 1.7 (SD = 0.43) and the average for LECAF is 1.36 (SD = 0.28), indicating that the LEC is more competitive after franchising. The t-test results for the LEC reveal that there is a significant difference in the within-season competitive balance between the LECBF and the LECAF ($t(24) = 2.35$, $p = 0.03$) at the 95% confidence interval. Similar to the LCS, the results confirm that the LEC after franchising became more competitive in each season.

Table 3. Independent T-test. Competitive Balance Results for the LEC

<i>Variable</i>	<i>LECBF</i>		<i>LECAF</i>		Δ	<i>t</i> (24)	<i>p</i>
	Mean	SD	Mean	SD			
<i>NS</i>	1.70	0.43	1.36	0.28	0.34**	2.35	0.03

Notes. *** Significant at 1%. ** Significant at the 5% level. * Significant at 10% level.

The increase in within-season or regular season balance found in both the LCS and LEC is supported by the research done on competitive balance comparing open and closed rugby leagues in Read et. al (2021).

Table 4 shows the calculated HHI values for each league before and after franchising. The values of the HHI can be interpreted as when $HHI = 0$ or approaches 0, then roughly all teams in the league equally win first place. When $HHI = 1$, then there is perfect domination, where only a single team wins first place for every season. The results from table 4 show that in the LCS, there were less teams winning first

place throughout the period before franchising than after franchising. However, the opposite is true for the LEC. The table shows that before franchising, the LEC was more competitive season to season with more teams able to win first place than in the period after the LEC franchised.

Table 4. First Place Concentration results for the LCS and LEC before and after franchising

<i>HHI</i>			
<i>LCSBF</i>	<i>LCSAF</i>	<i>LECBF</i>	<i>LECAF</i>
<i>0.44</i>	0.23	0.46	0.56

In the LCS and LEC, placing in the top four in the postseason will guarantee prize money to an organization, while placing first in the competition won the team prize money as well as an invitation to the Mid-Season Invitational (MSI) or World Championship depending on the season. These global invitationals allowed teams to gain a global audience and chances for larger prize earnings. By securing a place in the top four, many teams are able to strengthen their team’s financial stability through prize money and possible stream revenue from future events such as MSI or Worlds.

Table 5-8 displays the number and percentages of first place finishes and top four placements during the postseason for every unique team in the history of the LCS and LEC. These tables visualize the changes in competitive balance between open and closed leagues for each respective league. The number of unique teams that qualified for top four placements signifies that there is more competition in the regular season since more teams are competing for mid-table placements. The number of unique teams placing first displays the dominance measure. If more teams placed first, there would mean less dominance by one singular team.

Table 5. Unique Teams and Placements in the LCSBF

<i>Team LCSBF</i>	<i>Seasons</i>	<i>First Place</i>	<i>First Place (%)</i>	<i>Top Four</i>	<i>Top Four (%)</i>
<i>Team SoloMid</i>	10	6	60%	10	100%
<i>CLG</i>	10	2	20%	5	50%
<i>Team Dignitas</i>	9	0	0%	2	22%
<i>Cloud9</i>	9	2	20%	6	67%
<i>Team Liquid</i>	6	0	0%	3	50%
<i>Team Coast (Good Game University)</i>	4	0	0%	1	25%
<i>Team Curse*</i>	4	0	0%	3	75%
<i>Immortals</i>	4	0	0%	3	75%
<i>Echo Fox</i>	4	0	0%	0	0%
<i>Team Impulse (LMQ)</i>	4	0	0%	3	75%
<i>XDG (Team Vulcun)</i>	3	0	0%	2	67%
<i>Team Envy</i>	3	0	0%	0	0%
<i>Phoenix1</i>	3	0	0%	1	33%
<i>Winterfox (Evil Geniuses)</i>	3	0	0%	0	0%
<i>compLexity Gaming</i>	2	0	0%	0	0%
<i>Gravity Gaming</i>	2	0	0%	0	0%
<i>Team8</i>	2	0	0%	0	0%
<i>NRG eSports</i>	2	0	0%	0	0%
<i>FlyQuest</i>	2	0	0%	1	50%
<i>Velocity eSports</i>	1	0	0%	0	0%
<i>Enemy</i>	1	0	0%	0	0%
<i>Team Dragon Knights</i>	1	0	0%	0	0%
<i>Renegades</i>	1	0	0%	0	0%
<i>Apex Gaming</i>	1	0	0%	0	0%
<i>Team MRN</i>	1	0	0%	0	0%
<i>Average</i>	3.68				

Team Curse* - merges into Team Liquid Jan 2015

In the LCSBF, 12 out of the 25 total teams (48%) that participated were able to make the top four and 3 teams (12%) placed first. The team that placed first the most in this time was Team SoloMid with a total of 6 times out of 10 seasons, winning 60% of the seasons they played in before the LCS franchised. After franchising, 11 out of the 15 teams (73.3%) in the LCS made the top four and the number of teams that placed first grew to 7 (46.6%). Team Liquid placed first the most after franchising

with 5 first place finishes, which was 36% of the recorded period after franchising since they played every season in the LCSAF.

Table 6. Unique Teams and Placements in the LCSAF

<i>Team LCSAF</i>	<i>Seasons</i>	<i>First Place</i>	<i>First Place (%)</i>	<i>Top Four</i>	<i>Top Four (%)</i>
<i>100 Thieves</i>	14	1	7%	8	57%
<i>Cloud9</i>	14	4	29%	13	93%
<i>FlyQuest</i>	14	1	7%	6	43%
<i>Team Liquid</i>	14	5	36%	12	86%
<i>Golden Guardians</i>	12	0	0%	2	17%
<i>Team SoloMid</i>	12	1	8%	6	50%
<i>CLG</i>	11	0	0%	1	9%
<i>Dignitas</i>	10	0	0%	0	0%
<i>Immortals</i>	10	0	0%	0	0%
<i>Evil Geniuses</i>	8	1	13%	4	50%
<i>Clutch Gaming</i>	4	0	0%	2	50%
<i>Echo Fox</i>	4	0	0%	1	25%
<i>Optic Gaming</i>	4	0	0%	0	0%
<i>NRG eSports</i>	3	1	33%	1	33%
<i>Shopify Rebellion</i>	2	0	0%	0	0%
<i>Average</i>	9.07				

In LECBF, the 15 out of the 25 teams (60%) made the top four and only 3 unique teams (12%) placed first. The eSport team, Fnatic, was the team that placed first the most before franchising. Playing all 12 seasons of the LECBF, Fnatic is the only team that played in every season of the LECBF, placing first in the league 58% of the time were active competitors and placing top four in the league 92% of the time. In the LECAF, most of the teams were competitive during the regular season throughout the franchise period. 14 out of 15 teams (93.3%) placed in the top four throughout the recorded period and only 3 teams (20%) placed first in league. The team G2 eSports took first place a total of 10 times out of the total 14 seasons (71%) and made the top four every season they were active competitors.

Table 7. Unique Teams and Placements in the LECBF

<i>Team LECBF</i>	<i>Seasons</i>	<i>First Place</i>	<i>First Place (%)</i>	<i>Top Four</i>	<i>Top Four (%)</i>
<i>Fnatic</i>	12	7	58%	11	92%
<i>Team ROCCAT</i>	10	0	0%	2	20%
<i>Giants Gaming</i>	8	0	0%	0	0%
<i>Unicorns Of Love</i>	8	0	0%	4	50%
<i>H2K</i>	8	0	0%	5	63%
<i>Gambit Gaming</i>	6	0	0%	2	33%
<i>SK Gaming</i>	6	0	0%	4	67%
<i>G2 Esports</i>	6	4	67%	5	83%
<i>Team Vitality</i>	6	0	0%	2	33%
<i>Splyce</i>	6	0	0%	2	33%
<i>Copenhagen Wolves</i>	5	0	0%	0	0%
<i>Elements (Alliance)</i>	5	1	20%	2	40%
<i>Origen</i>	4	0	0%	2	50%
<i>Misfits Gaming</i>	4	0	0%	3	75%
<i>FC Schalke 04</i>	3	0	0%	1	33%
<i>Evil Geniuses</i>	2	0	0%	2	100%
<i>Ninjas in Pyjamas</i>	2	0	0%	0	0%
<i>Meet Your Makers</i>	2	0	0%	0	0%
<i>SUPA HOT CREW</i>	2	0	0%	0	0%
<i>Millenium</i>	2	0	0%	0	0%
<i>Against all Authority</i>	1	0	0%	0	0%
<i>Dragonborns</i>	1	0	0%	0	0%
<i>Lemondogs</i>	1	0	0%	1	100%
<i>ALTERNATE aTTaX</i>	1	0	0%	0	0%
<i>Mysterious Monkeys</i>	1	0	0%	0	0%
<i>Average</i>	4.48				

After franchising, both leagues saw a decrease in the number of unique teams that played. This could lead to questions asking whether both leagues actually became more competitive since there were fewer competitors in the market after franchising. Although the number of teams decreased, it should be noted that during the open league time period, most of the new teams entering the LCS and LEC often remain at the bottom of the standings or were relegated shortly after entering the league. This could be seen by looking at the number of seasons played for each unique team in both the LCS and LEC in tables 5-8. In the LCSBF, 11 teams out of the 25 unique

teams (44%) played less than 3 seasons with 1 of the 10 able to finish in the top four while active in the league

Table 8. Unique Teams and Placements in the LECAF

<i>Team LECAF</i>	<i>Seasons</i>	<i>First Place</i>	<i>First Place (%)</i>	<i>Top Four</i>	<i>Top Four (%)</i>
<i>G2 eSports</i>	14	10	71%	14	100%
<i>Fnatic</i>	14	0	0%	11	79%
<i>SK Gaming</i>	14	0	0%	1	7%
<i>Team Vitality</i>	14	0	0%	2	14%
<i>Excel Esports</i>	14	0	0%	1	7%
<i>MAD Lions (Splyce)</i>	14	3	21%	9	64%
<i>Rogue*</i>	11	1	9%	6	55%
<i>Astralis (Origen)</i>	11	0	0%	2	18%
<i>Misfits Gaming</i>	8	0	0%	1	13%
<i>Team BDS</i>	8	0	0%	4	50%
<i>FC Schalke 04</i>	6	0	0%	2	33%
<i>Team Heretics</i>	6	0	0%	1	17%
<i>Karmine Corp</i>	3	0	0%	1	33%
<i>KOI*</i>	3	0	0	1	33%
<i>GIANTX</i>	3	0	0%	0	0%
<i>Average</i>	9.53				

Rogue* - Merges with KOI between Oct 2022-Nov 2023, then re-established as Rogue.

KOI* - Merges with MAD Lions in January 2024.

In the LECBF, 10 out of 25 teams (40%) played less than 3 seasons with 2 teams out of the 10 able to make a top four finish. Since many teams are not able to survive long enough in the open league format, it left the LCS and LEC very top heavy, where only the best teams could compete for higher placements and new teams fight off relegation. Since there is no relegation after franchising, teams were able to stay in the LCS and LEC for longer periods of time.

Conclusion

In this paper, I studied the competitive balance in the growing industry of eSports. The purpose of studying competitive balance is to understand what leagues

could do to increase fan retention and viewers. With the surging growth of competitive videogaming, its future as sports entertainment relies on the support of its consumers.

Studying the change in league formats that occurred in the LCS and LEC within the eSport of LoL, I look at league structure and the effects it has on competitive balance. In the study of the LCS and LEC, I found that the switch from open to franchise increased the within-season competition. The LCS dropped from an average of 1.85 to 1.50, which was a significant drop symbolizing the increase in competition. The LEC saw a similar increase in competition, the average NS measure dropping from 1.7 to 1.36 after franchising. However, looking at the between-season competition, I found inconsistent results between the two leagues. In the LCS, there was less dominance with more teams competing for first, while in the LEC, the results show increased team domination within the league after franchising.

One possible explanation for the increase in within-season competition could be that the teams are more financially stable resulting from the lack of relegation in a franchise system. Without relegation, team revenue is more consistent making investing less risky. With more investment, all teams in the league could spend more on players evening out competition. The lack of new teams entering the league resulting from the limited and large entry cost also places a standard for all teams within the league. Relatively all teams are financially equal compared to the open league format where new teams are placed at a disadvantage from the start.

Overall, using the case of LoL, the study suggests that closed leagues are better for the within-season competition and more data is needed to confirm whether the effects of league format increases/decreases between-season competition. Future research stemming from eSports and competitive balance could include looking at competitive balance in other eSports leagues that focus on one of the two league models.

Limitations

My study of open and closed leagues was not perfect and had some limitations. One such limitation included using the NS measure to look at within-season competition. Research done by Owen & King (2015) highlights the bias the measure has towards shorter seasons and Doria & Nalebuff (2021) adjust the measure to account for season length but not number of teams. In the study of the LCS and LEC, I found that there were many instances of short seasons where each team played less than 20 games. In the LCS the lowest number of games played per team when there were 8 teams in the league was 14. The lowest number of games played per team when there were 10 teams in the league was 18. In the LEC, the lowest number of games played per team when there were 8 teams in the league was 28. The lowest number of games played per team when there were 10 teams in the league was 9. Applying both the NS and another measure accounting for season length such as the method used in Kringstad (2021) could provide different test results.

Specifically for the analysis of eSports, one limitation arose which I couldn't account for in my study of competitive balance. This being the effects of in-game mechanics on competition. For video games, the balance of mechanisms such as character abilities and map design has a direct effect on the strategies teams apply in eSports. If something in the game results in a one-sided advantage or strategy, teams will exclusively use these strategies to win games. The level of teamwork, communication, and skill required in eSports is very different compared to a casual or normal competitive gaming experience. When professional gamers use these unfair tactics resulting from unbalanced game mechanics or designs, the difference in winning a game could be a small hiccup from a single player. Map design could play a role in the outcome of a game too. Some games have maps which give one side an advantage. If one team gets the map advantage for a period of time, then even if the sides switch to where the opposing team gets the advantage, it is more likely that the team who originally had the advantage would win the overall game. Balanced in-

game mechanics supports diversity in strategies used in eSports as well as the skill required to perform at a high level. Without in-game balance, skill takes a backseat, and games become more reliant on other factors which hurt the competitive and entertainment aspects of gaming.

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