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BUSINESS & ECONOMICS

Luck vs. Skill: Looking at Determinants of Success through the Lens of Football

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Dissertation written under the supervision of Professor Peter Rajsingh PhD

Dissertation submitted in partial fulfilment of requirements for the MSc in
Management with Specialization in Strategy & Entrepreneurship, at the
Universidade Católica Portuguesa, April 2022

Abstract

Title: Luck vs. Skill: Looking at Determinants of Success Through the Lens of Football

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The game of football is experiencing significant changes in the way clubs operate as well as how the game is played. These developments impact the way clubs and players thrive in their quest to achieve success and greatness. Two of the most important components for achieving success are luck and skill. This dissertation examines the influences luck and skill have on the success of clubs and also on players. As even less skilled teams became more competitive over time, football is often a game of small margins. To make the best decision in these moments, you need either a higher level of skill or a little luck. Based on qualitative research in form of expert interviews, together with in-depth analysis of current academic literature, there seems to be a strong indication that a high level of skill will often be successful over the medium and long term, however it will not be able to guarantee success in the short term. That is where the component of luck comes into the picture. Due to generally better conditions (better players and coaching education, data availability, organizational structures, greater professionalism) especially for smaller clubs, matches are won by smaller margins. All of this suggests that there is currently a larger pool of mid-talented players, resulting from a narrowing skill gap. On the other hand, highly talented players are increasing and experts expect this number to continue to rise in the future.

Keywords: Football, Luck, Skill, Performance, Competitive Advantage, Talent, Sports, Organizations, Players, Teams, Clubs

Resumo

Título: Sorte vs. habilidade: Olhando para os fatores de sucesso utilizando o futebol como exemplo

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O jogo de futebol está a sofrer alterações significativas na forma como os clubes funcionam, bem como na forma como o jogo é jogado. Estes desenvolvimentos têm impacto na forma como os clubes e os jogadores prosperam na sua busca pelo sucesso. Dois dos componentes mais importantes para alcançar o sucesso são a sorte e a habilidade. Esta dissertação analisa as influências que a sorte e a habilidade têm sobre o sucesso dos clubes e também sobre os jogadores. Como ainda equipas menos qualificadas se tornaram mais competitivas ao longo do tempo, o futebol é frequentemente um jogo de pequenas margens. Para tomar a melhor decisão nestes momentos, é necessário ou um maior nível de habilidade ou sorte. Com base na investigação qualitativa sob a forma de entrevistas de peritos, juntamente com uma análise aprofundada da literatura académica atual, parece haver uma forte indicação de que um alto nível de perícia será bem-sucedido a médio e longo prazo, no entanto, não será capaz de garantir o sucesso a curto prazo. É aí que a componente sorte é considerada. Devido a condições geralmente melhores (melhores jogadores e formação de treinadores, disponibilidade de dados, estruturas organizacionais, maior profissionalismo) especialmente para clubes mais pequenos, os jogos são ganhos por margens menores. Tudo isto sugere que existe atualmente mais jogadores de talento médio, resultante de um estreitamento da diferença de competências. Por outro lado, os jogadores altamente talentosos estão a aumentar e os especialistas esperam que este número continue a aumentar no futuro.

Palavras-Chave: Futebol, Sorte, Habilidade, Desempenho, Vantagem Competitiva, Talento, Desporto, Organizações, Jogadores, Equipas, Clubes

Acknowledgements

First and foremost, I would like to thank and express my deepest gratitude towards my supervisor, Prof. Peter Rajsingh. He was always patient, supportive and a great guidance sharing valuable feedback and knowledge throughout the whole process.

Furthermore, I also would like to thank all my interview partners, for taking their time, showing great interest in my topic and especially sharing their interesting insights, which were indispensable and contributed significantly to my dissertation.

Even in these rather unusual times, I did thoroughly enjoy my entire journey at Católica Lisbon and will take all the great memories and people with me on to the next journey. This applies not only to all the inspiring people at Católica Lisbon, but also all my friends who accompanied me already for many years and were a great source of motivation and joy at all times and kept me dreaming.

Lastly and most importantly, I would like to say thank you from the bottom of my heart to my family and closest friends who always believed in me and supported me. Thanks to all your support, trust, and inspiration I was able to learn and experience things I would have never imaged. All of you are the reason why I am now able to finish the last step in my academic career. That is why I dedicate this dissertation to you.

Thank you very much to everybody who contributed in any way!

Table of Contents

ABSTRACT	I
RESUMO.....	II
ACKNOWLEDGEMENTS.....	III
LIST OF FIGURES	V
LIST OF TABLES.....	VI
1. INTRODUCTION	1
2. LITERATURE REVIEW	3
2.1 INTRODUCTION	3
2.2 THE COMPONENT OF LUCK	3
2.3 THE COMPONENT OF SKILL	5
2.4 THE RELATIONSHIP BETWEEN LUCK AND SKILL	9
2.5 COMPETITIVE ADVANTAGE WITH LUCK AND SKILL	10
3. METHODOLOGY	13
3.1 RESEARCH METHODOLOGY	13
3.2 DATA COLLECTION	14
3.2.1 <i>Primary Data</i>	14
3.2.2 <i>Secondary Data</i>	15
4. ANALYSIS AND DISCUSSION.....	16
4.1.1 <i>Influence of Luck in Football</i>	16
4.1.2 <i>Influence of Skill in Football</i>	18
4.1.3 <i>Influence of Competitive Advantages in Football</i>	24
5. CONCLUSION.....	28
5.1 GENERAL CONCLUSION	29
5.2 LIMITATIONS.....	30
5.3 SUGGESTIONS FOR FUTURE RESEARCH.....	30
6. LIST OF REFERENCES	VII
7. APPENDIX.....	XIII

List of Figures

Figure 1: Components of Peak Performance 22

Figure 2: Organizational Structure for Peak Performance..... 23

Figure 3: Relationship Transfer Spending and Market Value Manchester City..... 26

Figure 4: Relationship Transfer Spending and Market Value Paris Saint-Germain..... 26

Figure 5: Final League Position Manchester City and Paris Saint-Germain from 2006 until
2021..... 26

List of Tables

Table 1: Most Notable Transfer Profits of FC Brentford 12

Table 2: Expert Interview Overview..... 15

Table 3: Number of Different Domestic Cup Winners vs. Number of Different Domestic League Winners between 2005-2020..... 16

Table 4: Number of First Goal Scored and following Win Percentage for their teams between 2018-2021 19

Table 5: Average Points with and without highly skilled players of their respective team of the last five seasons 2016 - 2021 19

Table 6: Expected Goals of Lionel Messi from 2016-2021 20

Table 7: Expected Goals of Robert Lewandowski from 2016-2021 20

Table 8: Expected Goals of Cristiano Ronaldo from 2016-2021 21

Table 9: Trophies won by Top 15 clubs in descending order by Deloitte’s Football Money League between 2017-2022 25

Table 10: Number of Champions League won for each League since 1992 27

1. Introduction

Football has always been a game of margins, sometimes decided by pure skill and in other cases by good or bad luck depending on which point of view people take. This unpredictability is a reason fans are attracted to the thrill of football (Mullin, Hardy & Sutton, 2000). One cause of this unpredictability is the randomness of how events on the field unfold which gives no team a guarantee of winning, resulting in not always the best team winning. This is similar to Jose Mourinho's belief that "The Champions League I say many, many times is not a consequence of a great work, you can win the Champions League in the worst season" (ESPN 2014). Liverpool and Chelsea proved him right, as they went on to win the Champions League after only finishing 5th (2005) and 6th (2012) in the league. Less skilled teams have a chance to prevail as all it takes is competent performance, a bit of good fortune, and an opponent not playing in a manner commensurate with its skill level.

With the rise of data analytics in football, the way clubs operate is changing with respect to styles of play and match preparation (Barros & Leach, 2007; Rein & Memmert, 2016; Low, Coutinho et al., 2020). Access to information means that there are fewer secrets, and this is leveling the playing field, making it more difficult for clubs to separate themselves from others. With today's scouting services and tools, even financially weaker teams are able to find the best players all over the world as it is no longer necessary to scout potential targets in person (Radicchi & Mozzachiodi, 2016). Getting these players to their clubs is a different story, nonetheless. Two influential phenomena in football to attain success are skill and luck (Bell & Brooks, 2013; Aoki, Assunção & Melo, 2017). These are often the decisive factors for who wins or loses matches or even championships.

Over the last decade, football has been evolving rapidly, influenced by changes in ownership models, financial resources available, and introduction and availability of data analysis for most of professional football clubs (Schubert & Hamil, 2018; Wilson, Plumley & Ramchandani, 2013). These changes also have an impact on the on-field performance of teams. A small cohort of teams tends to acquire all the most skilled and talented players while other clubs must start reconstructing themselves due to losing key players (Plumley, Wilson & Ramchandani, 2014). This makes it appear as if the skill gap between football clubs is increasing. However, the opposite is actually the case where we currently have a narrowing of that gap in football (Mauboussin, 2012). Based on the unpredictability of football due to it being a random game,

allows only for a limited outside influence (Ric, Hristovski, et al. 2016). Therefore, coaches and analysts are trying to impact the game even before it is played.

The component of luck should not be understated in strategy, and in the game of football. In a regular season in the top 5 leagues in Europe, team encounters vary between 34 matches (Germany (Bundesliga), Portugal (Liga Bwin)) and 38 matches (England (Premier League), Italy (Serie A), Spain (Liga BBVA) which constitutes a relatively small sample size, compared to other major sports leagues. In the NBA (National Basketball League) as well as in the NHL (National Hockey League) a regular season consists of 82 matches and in the MLB (Major League Baseball) at least 162 matches will be played in the regular season, not considering playoffs for all the three leagues. How does the component of luck affect the success of clubs and players and in who will become the champion?

There is a notable lack of academic literature on skill and luck which this dissertation tries to fill. Unraveling the gap and illustrating the relation between the impact of luck and skill in football will illuminate these important variables for other areas of business.

This dissertation interrogates the following research questions:

- 1. To what degree is the component of luck a determinant for player and team success? How much does skill actually matter?*
- 2. Is skill alone a source of competitive advantage or only in combination with luck? To what degree is skill and luck influenced by a club's organizational structure? What effects does that have on a club's operating ability?*

To discuss these questions, we begin with a review of the relevant literature from leading academic and managerial sources. This is followed by discussion of the methodology regarding the data collection and analysis used in this dissertation. In the fourth chapter there is analysis and discussion of the findings to attempt to answer the research questions. The fifth and final chapter are our conclusions, discussion of limitations, and suggestions for future research.

2. Literature Review

2.1 Introduction

To take a holistic and conclusive approach the literature review will be divided into four separate sections. Firstly, we discuss the component of luck; secondly, the component of skill; thirdly, the relationship between luck and skill and, lastly, competitive advantages with regard to luck and skill.

2.2 The component of Luck

Michael Raynor (2007) makes the claim that uncertainty is not adequately addressed when considering strategy. He further posits that most significant variable distinguishing success from failure when firms engage in significant risk-taking, is luck. Mauboussin (2012) speaks of luck in sports as “a chance/occurrence that affects a person or a group (e.g., a sports team or a company).” For some it can have a positive effect and is called good luck or good fortune. When a person or a group is negatively affected by luck, this is taken to be bad luck or misfortune (Mauboussin, 2012). It is important to note that luck is treated as beyond the control of individuals, sport teams or companies, due to its unpredictability.

Unpredictability and the nature of luck in football is difficult to quantify or measure. According to Hewitt, Greenham & Norton (2016), “the description of distinguishing features of games such as ball and player movement patterns, strategies of attacking and defending play, and how teams work to maintain or regain possession of the ball, is poorly defined and therefore difficult to categories or compare scientifically.” Other researchers suggest that variables have often been measured as a result of availability rather than as attempts to develop deeper understanding of performance (Mackenzie & Cushion, 2012), And “untangling skill and luck is an inherently tricky exercise, and there are plenty of limitations, including the quality of the data, the sizes of samples, and the fluidity of the activities under study” (Mauboussin, 2012). Even though, technological advancements allow for better and more accurate player and match tracking, despite analysis of playing styles or environmental conditions over recent years, a certain element of luck remains. Hence, the phrase “not everything that matters can be measured, and not everything that can be measured matters” (Mauboussin, 2012) holds true.

“The size of the sample of possessions in basketball is almost double that of lacrosse. That means that luck plays a smaller role in basketball, and skill exerts a greater

influence on who wins. Because the size of the sample in lacrosse is smaller and the number of interactions on the field so large, luck has a greater influence on the final score, even though the game is longer” (Mauboussin, 2012).

Mauboussin illustrates the impact of luck in basketball and lacrosse to claim that football is like lacrosse since it is based on many interactions, mostly in the form of passes, and the sample size in terms of shots and goals is rather small. Plus, a game of football lasts at least 90 minutes whereas basketball ends after 48 minutes. Consequently, the influence of luck is greater than in basketball. According to Mauboussin’s luck-skill continuum, football is the sport with the second most impact of skill on the final score, after basketball (2012). Rasmus Ankersen (2018) is sharing this view “The fewer goals there is in a sport, the more impact random events have. Ultimately, this means that the best team wins less often in football, a low scoring sport, than in a high scoring sport like basketball”.

The most important aspect of football is obviously scoring goals. In order to do so, players have to shoot and football players do this 15.86 times per game on average. This statistic reflects the top 20 teams in Europe’s top five leagues regarding goals shot per game (WhoScored, 2022). When compared to a total of 81.30 shots that a basketball team has per game (FiveThirtyEight, 2019), erasing an unlucky deficit of one goal is definitely more difficult in football than in basketball. However, Yue, Broich and Mester (2014) found that it is not the quantity of shoots that is most important for winning a match but rather the goal efficiency. “Goal efficiency is defined as the number of goals divided by the number of shots” (Yue, Broich & Mester, 2014). In descending order, most important are the number of shots, the number of passes, and the number of ball contacts (Yue, Broich & Mester, 2014). Teams that have higher goal efficiency should also perform well in combination with higher skill levels. Mauboussin (2012) adds that, “it is also true that the number of opportunities a team has to score will greatly determine the influence of luck on the outcome of the game.” By implication, the more chances a team has to score, the greater the influence of skill.

Another trend has been the decline of actual playing time (Siegle & Lames, 2012). On average a football match has 108 interruptions (Siegle & Lames, 2012). This means that a more skilled team potentially has less than 90 minutes to score a goal. The longer a match goes on, the less effective match time is. In the first 15 minutes, there is, on average, 66.3% of the total playing time while in the last 15 minutes players only have about 55.9% of the remaining minutes to

score a goal (Lames, Linke, Link & Weber, 2018). This compression of time traces to factors that include time wasting in the form of kicking the ball out, faking injuries, taking longer for set pieces or throw-ins than required, etc. (Greve, Rudi & Walvekar, 2019). It often becomes more extreme when a less skilled team has a favorable score and starts exploiting their advantage. Lames, Linke et al. (2018) found that decrease in play time is not attributable to declines in physical performance but results from game interruptions. This tends to favor less skilled teams and the aspect of luck gains importance.

When you are the favorite, you want to simplify the game so that you can succeed due to your higher skill level. If you are the underdog, you want to inject luck by making the game more complex (Mauboussin, 2012). Epstein (1977) concludes that “there is no way to assure that you'll succeed if you participate in an activity that combines skill and luck” and it is safe to assume that every game has to be played before pronouncing a winner.

2.3 The component of Skill

Even though football clubs have access to more data than ever, clubs with larger financial resources still fail to identify and transfer fitting highly skilled players for their team. Nevertheless, there seems to be a natural correlate that financial success and success on the pitch go together (Plumley, Wilson & Shibli, 2017). As research indicates teams with higher wage bills show stronger sporting performances and better results in the standings (Andreff, 2018; Ballesteros & Pena, 2010). Nonetheless, Mauboussin (2012) found that, highly skilled star players often struggle to adapt after transferring to a new club. Groysberg, Sant and Abrahams (2008) show that organizations tend to overestimate the degree to which a star's skills are transferrable. They attribute this mainly to fit between the player's skill and the resources the club or organization is able to provide. This means that to flourish as player, clubs need structures which make it easy to transfer skills. Otherwise, according to Groysberg, Sant & Abrahams (2008), you see a decline in performance. Another important aspect is that employers systematically overestimate the power of individual skill and underestimate the influence of the organization in which he or she operates (Groysberg, Sant & Abrahams, 2008). This oftentimes results in a decline in performance from elite players who change clubs, compared to other elite players who stay with their current teams. Nonetheless, elite talent will eventually assert itself over several seasons, as players adjust to the team and organization (Groysberg, Sant & Abrahams, 2008). In this time of greater media coverage, it is difficult to remain objective about

player's and club's performances. Players who score decisive goals in a game are heroes for a week, then the next week the media and fans are pushing for a transfer if they fall out of favor. Consequently, players with a certain skill level are frequently overvalued and the contribution of supporting factors (teammates, organization, staff) are commonly forgotten or underestimated (Mauboussin, 2012). Thus, we do not see a symbiotic relationship that combines skill of players with the powerful influence of the club organization (Groysberg, Sant & Abrahams, 2008).

The skill gap between highly skilled teams and less skilled teams has narrowed over time for most sports (Gould, 2004). Thus, weaker teams make up for their deficits in skill with tactics, effort and a better education. The physical conditions and professionalization of teams with fewer resources has impacted the skill gap significantly (Ali, 2011; Helsen, Hodges, Van Winckel & Starkes, 2000). Teams can play a faster game over a longer period, keep up their concentration levels until the end of the match, and experience less fatigue which limits errors (Weimar & Wicker, 2017). By playing deeper (defend closer to your own goal), there is less space for skilled teams to play through and more defenders to pass, as everything is concentrated within tight spaces (Zhang, Pérez & Patras, 2020).

As skill, over the long run, will usually prevail, the aspect of luck enables weaker teams to effect upsets on a regular basis. The less skilled team can get lucky once or twice, but it will be more difficult to replicate these over many games. Therefore, variance in who wins cup competitions like the domestic cup or Champions League is greater than for domestic league championships. Luck also enables smaller teams to achieve surprising upsets in cup competitions as these most of the time are one off games and skill can be negated more easily in a short period.

In addition, variables which could be categorized under bad luck also play a role such as a high number of injured or suspended players, performance fluctuations, weather/pitch conditions, etc. As such, the general element of luck is impossible to eliminate. Another random and lucky variable relates to climate. Hoffman, Ging & Ramasamy (2002) show that countries with temperate climates are more successful at sports generally. In particular, an average annual temperature in the region of 14 degrees Celsius is associated, *ceteris paribus*, with better sporting performance (Hoffman, Ging & Ramasamy, 2002).

“When skill dominates, a small sample is sufficient to understand what's going on” according to Mauboussin (2012). When Roger Federer was in his prime, you could watch him play a few games of tennis and know he was going to win against all but one or two of the top players. It was not necessary to watch a thousand games. But in activities that are strongly influenced by luck, a small sample is useless. You need a large sample to draw any reasonable conclusion about what might happen next (Mauboussin, 2012).

Induction entails drawing general conclusions from specific observations (Mauboussin, 2012). When luck greatly influences an activity, there is greater risk using induction to draw conclusions (Mauboussin, 2012). If one player performs exceptionally well, for example, over a period of two or three games, a potential club scout will likely make inductive generalizations about future performance. There are exceptions for players at the elite level like Messi or Ronaldo where a small sample size should be sufficient to generalize skill. So, “when skill dominates, a small sample is sufficient to understand what is going on (...) In activities that are strongly influenced by luck, a small sample is useless and even dangerous” (Mauboussin, 2012).

One of the worst mistakes is going to the opposite extreme of biases. Under the gambler’s fallacy, people assume that some kind of justice or greater force will even things out (Rabin & Vayanos, 2010). Proceeding from that assumption, when a team gets two penalties against it or two red cards, the next penalty is assumed to be definitely for them, and the red card for the opposition team. But the events are actually unrelated and decoupled from future events. Yet this form of erroneous thinking happens unconsciously (Rabin & Vayanos, 2010).

As previously mentioned, the skill gap has narrowed over time (Gould, 2004). Less skilled teams are capable of achieving potential upsets. Piltz and Launder (2013) state that “repeated success does not happen by chance but involves high work rates by teammates, anticipation of movement, and a high level of team coordination.” One example is the running distance of a team in a game. A team’s probability of winning increases 26-28% according to Weimar & Wicker (2017) if the team runs on average one kilometer more relative to the opponent. Additionally, it is better for a team to have some lazier players and some who run a lot to increase the probability of winning (Weimar & Wicker, 2017). Furthermore, Thelwell et al. (2005) portray mental toughness as “having the natural or developed edge that enables you to always cope better than your opponents with the many demands (competition, training,

lifestyle).” In Appendix I we list the ten components of mental toughness articulated by Thelwell et al. Gould (2007) states that more successful players and teams have well-developed mental preparation routines, better plans for dealing with distractions, and spend more time developing their mental preparedness. These components commonly do not require a high degree of skill but relate to a high degree of effort and discipline.

One common saying in sports is that the table/standings never lie. Actually, most of the time the opposite is true according to Ankersen (2018). He is referring to a large influence of the outcome bias nowadays, where people assume that good results are the consequence of good decisions (2018). Goal differentials often indicate that a team is over or underperforming. Being in the top 4 with close to 0 goals indicates a team that wins close games but never really outscores opponents. One could assume that luck is favoring this team. The same could be said for teams fighting relegation, having a closer to 0 goal differential while others have -20 or -30. This suggests bad luck and losing close games but not really worse teams.

“Since we draw our sample from the outcome, not the strategy, we observe the successful company and assume that the strategy was good. In other words, we assume that the favorable outcome was the result of a skillful strategy and overlook the influence of luck. We connect cause and effect where there is no connection” (Mauboussin, 2012).

A certain degree of Competitive Balance is also seen as a key component to success of sports leagues and “each competitor has an inherent interest in maintaining the health of their rivals” (Groot, 2008). Competitive balance depends on the distribution of player talent among clubs (Késenne, 2000). Elite players want and need to compete against each other to thrive and reach their full potential (Mitchie & Oughton, 2004). By having a highly competitive balance, players are more attractive to leagues and clubs as these entities seek to showcase who the best players are. Keeping in mind that more populous countries can draw on a greater pool of potential world-class football talent, they are expected to be relatively more successful at the sport (Hoffman, Ging & Ramasamy, 2002). Countries with a cultural affinity or background towards football also have an edge (Hoffman, Ging & Ramasamy, 2002).

2.4 The relationship between Luck and Skill

Mauboussin (2012) in *The Success Equation Untangling Skill and Luck in Business, Sports, and Investing*, also seeks to explain the difference between luck and skill. In particular, with regard to sport and business, “luck is a residual: it's what is left over after you've subtracted skill from an outcome” (Mauboussin, 2012). An athlete can reduce variation in performance through practice, but removing it altogether is virtually impossible (Mauboussin, 2012). Hence, it is possible to perform strongly due to skill with few or no mistakes and still end up losing as the influence of luck is simply stronger. Furthermore, “when luck has little influence, a good process will always have a good outcome. When a measure of luck is involved, a good process will have a good outcome but only over time.” (Mauboussin, 2012). Success always depends on both luck and skill factors since one can be rescinded by the other. “When predictions of experts tend to be uniform and accurate, skill is the driving factor. When experts have wide disagreement and predict poorly, luck is generally involved” (Mauboussin, 2012).

One of the highest chances of scoring a goal is by being awarded a penalty kick. For a long time, people assumed going into a penalty shootout is like playing the lottery, the luckier player wins the duel. Research nowadays suggests that penalties are actually less about luck and more about skill than previously assumed. Thus, different techniques increase the likelihood of scoring, such as taking a deep breath after the referee's whistle and deciding for oneself when to take the penalty (Wilson, Peper & Moss, 2006), choosing a keeper-independent approach (selecting where to shoot in advance and ignoring goalkeeper movement) (Van der Kamp, 2005). On the other hand, looking at the conversion rate of successful penalties in the Premier League by considering all penalties given from 1992 until 2021, there was a decline in successful penalties converted (Myfootballfacts, 2022). A more detailed overview is in the Appendix (Table 10).

In addition, the percentage of penalties awarded to home teams is 61%, while the away teams only received around 39% of all penalties (Myfootballfacts, 2022). Also, referee bias impacts the game as well and demonstrates that crucial decisions often favor the home team (red cards, awarding goals, penalty kicks) (Dohmen, 2008; Garciano, Palacios & Prendergast, 2005). Even if referees do not intend this, they nevertheless add a critical element of luck and unpredictability to the game. Nonetheless, skill seems also to play a significant role. Between 2010 to 2021, the team with most penalties awarded in the Premier League over a season was

a top 5 placed team in the standings in 9 out of 11 cases (Myfootballfacts, 2022). A detailed illustration can be found in the Appendix (Table 11). This tends to suggest that a higher level of skill enables a team to draw more penalties over a season.

Looking at the paradox of skill from Mauboussin (2012), as skill improves, performance is more consistent, and luck becomes more important. Stephen Jay Gould (2004) argues that in every sport where performance can be measured, performance had steadily improved over time. As athletes uniformly become more skillful, the imponderables of luck become more important than ever (Gould, 2004). As the effect of skill diminishes and becomes less of a distinguishing factor, luck plays a greater role and the influence of mistakes increases. The paradox of skill is also transferable into the business world. One company's achievement or increasing performance is less relevant when a competitor's skill and performance increases in tandem. So, no real competitive advantage is able to be acquired. Overall Gould (2004) summarizes the phenomenon as follows: "long streaks of success are, and must be, a matter of extraordinary luck imposed on great skill." Malcolm Gladwell in *Outliers: The Story to Success* (2008) adds to the point by stating that people often think only of the grit and talent, forgetting the substantial role luck played in the process. He attributes this to the fact that crediting luck does not make for a good story. Nevertheless, if you look closely, luck is everywhere and people probably put too much emphasis on skill and too little on luck. Why the longest winning streak or best performances are still achieved by the most skilled players is explained by suggesting that the chance of succeeding is simply higher for the greatest players than for the average due to the former's superior skill (Gould, 2004). As luck by itself is capable of firing up long winning streaks and increases confidence in the abilities of a team as well as of individual players, a greater emphasis on luck and trying to attract good luck is recommended (Gould, 2004).

2.5 Competitive Advantage with Luck and Skill

Strategy and competitive advantage come in many different forms in football. As Hewitt, Greenham & Norton (2016) propose, football "can be described as competition between teams involving moments of frenzied attacking movements to create imbalance in player position and numbers versus a homeostatic environment of rapid re-organization towards control, possession and stability." Tactics are a major tool which entails "actions voluntarily executed during the game by the players in order to adapt to the immediate requirements of an ever-changing opposition" (Hewitt, Greenham & Norton, 2016). Therefore, appointing the right leadership is

vital for the future success of professional sports teams. There is a direct link between coach/leader behavior and athletes' performances (Horn, 2002). When tactics are considered new such as the Tiki Taka attributed to Pep Guardiola or the Gegenpressing linked with Jürgen Klopp, opponents often struggled to find a counter-strategy at the time as these were unfamiliar ideas. As a consequence, the combination of a talented coach coupled with a good team and novel tactics lead to success, at least in the initial phase of the strategy and sometimes over a longer time (Hentschel, Muehlheusser & Sliwka, 2014). The Gegenpressing is focused on recovering the ball as soon as possible after losing it. Vogelbein, Nopp and Hökelmann (2014) analyzed games in the German Bundesliga to demonstrate that top teams recovered the ball quickest compared to lower ranked teams. Ball recoveries closer to the attacking goal produced seven times more goals compared to ball recoveries in the defensive zones (Vogelbein et al., 2014). This illustrates a strategy that leads to competitive advantage.

Success is not a linear process. It depends on a large number of factors, including competitors (domestic league, international competition, domestic cup); technological developments (scouting/recruitment department, data analytics department, healthcare department, training facility); regulatory changes (ownership regulations, financial fair play); economic conditions of clubs (sponsoring, revenue, hospitality), to name a few. With clubs increasingly run as businesses, the struggle for competitive advantage becomes more acute.

Michael Porter (1985) coined the term competitive advantage which alludes to different ways of gaining an edge in an industry. One way is by offering lower prices, which could be seen as the football equivalent of the Moneyball theory established by Billy Beane in baseball (Lewis, 2003). This theory deployed data analysis to find players undervalued by others. Another popular example is FC Brentford. Due to its smart transfer policy, FC Brentford was able to acquire skilled players for a relative low price. After one season or two they were they able to sell these players for a significant profit. Using this method, they were able to move into the Premier League for the first time since 1947.

Name of Player	Buy Price (in €)	Sell Price (in €)	Profit (in €)
Watkins	7.22m	34m	26.50m
Benrahma	1.75m	27.50m	25.75m
Maupay	2m	22.22m	20.22m
Gray	620,000	12.40m	11.78m
Konza	2.85m	13.30m	10.45m
Hogan	950,000	10.50m	9.55m
Woods	1.35m	7.25m	5.90m

Table 1: Most Notable Transfer Profits of FC Brentford (Own Illustration)

The playing styles established by Pep Guardiola (Tiki Taka), Jürgen Klopp (Gegenpressing), and even older coaches such as Johann Cruyff (Voetball Total) were ahead of their time. They gained a competitive advantage through differentiation, playing a game play that was superior from a tactical perspective. Competitive advantage, though based upon Porter's approach, will be eliminated when other clubs or businesses copy or find superior tactics to one-up existing strategies (1985). Consequently, luck plays a greater role.

A possibly underrated source of competitive advantage can be found by looking into how goals come to be scored. Yiannakos and Aramats (2006) established that offensive play presented the highest frequency of goal scoring opportunities (44%), followed by set pieces (35.6%) and

counterattacks (20.3%). Furthermore, the significance of goal scoring opportunities arising from set pieces, for example, approximately 30% of goals in major football competitions arise from set pieces such as corner and free kicks (Ensum et al., 2000). Thus, clubs often have a small group of people solely responsible for corners or set pieces. According to Statsbomb (2017) average teams score 0.3 goals a game of set pieces while elite teams average 0.8 times a game after set pieces. Teams struggling to create scoring opportunities for passing games need to capitalize on these kinds of opportunities. Other research supports this claim with set play efficiency rising (defined as more goals scored from fewer set plays) (Grant & Williams, 1998; Alcock, 2010). To maximize a team's chances of scoring, Hill and Hughes (2001) suggest corner kicks should be played with curl, above head height and goal attempts should be made as quickly as possible.

Different leagues are permitting new ownership structures, like the City Football Group with Manchester City as its most prominent member along with nine other clubs, or Red Bull owning four different clubs. Multi-Club Ownership brings the competitive advantage of economies of scale. For example, there are farm teams where younger players gain game time at a professional level. Having more financial resources means better training facilities, stronger players coming from potentially better scouting and recruitment, etc. Being able to establish one play style throughout the club makes it easier for players to grow. Players can remain longer in the organization. There is evidence of a positive relationship between 'club culture' and 'organizational performance' (Schoot, 2016). When a club focuses more on the elements of club culture, financial performance, member satisfaction, and on-field performance increases (Schoot, 2016).

3. Methodology

The methodology part of this dissertation makes use of a qualitative approach in the form of semi-structured expert interviews. Using the data collected, the main objective of the dissertation is to address the research questions through discussion of primary data in addition to the insights gained from the secondary data Literature Review.

3.1 Research Methodology

After embedding the research topic in a theoretical context, the methodology is now presented.

The primary data collection took the form of semi-structured expert interviews (Edwards & Holland, 2013). The fluidity and flexibility of the semi-structured interview approach is vital to see distinctions in approaches, concepts, and experiences of the experts. This also allows for a greater variety of data. The semi-structured expert interviews aimed to contextualize luck and skill in a framework relevant to the football case. This is mainly based on a deductive approach, as this dissertation tries to break down common attributes, characteristics, and concepts to draw conclusions about certain aspects. Conducting qualitative semi-structured expert interviews also points to the difficulty of quantifying components of luck and skill. Furthermore, skill and luck being to a certain degree subjective means that there will be a variety of insights, making greater interviewer flexibility is important. To understand the concepts of luck and skill in the scope of football, concepts both from sports and the business world were considered and discussed. The business strategy perspective is important for a better understanding of how concepts and frameworks translate into to the game of football. Due to similarities and overlap in how luck and skill influence the success of players, clubs and organizations, literature from various domains was analyzed.

3.2 Data Collection

3.2.1 Primary Data

The primary data gathered came from 10 semi-structured expert interviews. The interviewees were approached and contacted via LinkedIn. Due to the current Covid19-pandemic, all interviews were conducted online over video call platforms such as Zoom. Most interviews had a duration of 30 to 90 minutes depending on the availability of the expert. Every conversation was recorded after receiving permission of the interviewees and was transcribed afterwards. All interviews had guiding and open-ended questions, allowing for comparability, while still leaving flexibility for adapting to the respective interview expert (Edwards & Holland, 2013). Additionally, semi-structured interviews foster the emergence of other questions between the interviewer and the interviewees. Thus, semi-structured interviews are useful to understand the relationships between different concepts and variables (Saunders, Lewis and Thornhill, 2007). The experts were from within the football industry and have extensive and deep knowledge about the influences luck and skill on clubs and players in football. Most of them have several years of practical experience working within successful clubs or organizations. Therefore, they were able to share valuable first-hand experience. Backgrounds were diverse and most have current roles such as performance analysts, consultants such as research and innovation

specialists. Some experts work in a football club while others were in companies or governing bodies. The table below provides specific descriptions of each expert with regard to their role and the type of company they work in. A more detailed portrayal of the individual interviews is in the Appendix.

ID	Expert Role	Company Type
1	Leader of Sports Performance Science Institute such as Head of Performance Analysis of a National Team	Research & Football Club
2	Match & Performance Analyst at one of FIFA's Top 15 Nations (FIFA, 2022)	Governing Body
3	Football Analytics Consultant	Consultancy
4	Chief Performance & Analytics Officer at a prestigious Italian Club	Football Club
5	Head of Sporting Technology & Insights at a top Ligue 1 Club	Football Club
6	Head of Data Analytics at one of FIFA's Top 5 Nations (FIFA, 2022)	Governing Body
7	Performance Coach with 25 years of experience as a Sports Scientist in Professional Football & Sport Consultant	Football Club & Company
8	CEO and Founder of a Leading Football Data Analytics Platform	Company
9	Head of Research & Innovation at one of Europe's Top 5 Club (UEFA, 2022)	Football Club
10	Founder & CEO of a successful Football Consultancy working with Premier League Clubs	Consultancy

Table 2: Expert Interview Overview (Own Illustration)

3.2.2 Secondary Data

The secondary data used in the dissertation supplements the experts' opinions and knowledge. The main sources of secondary data originated from Grade-A papers, academic journals, books, as well as official data and reports from the websites of governing bodies such as data providers. The secondary data expands on the literature review in Chapter Two, with a further in-depth review of existing literature based on the new findings extracted from the expert interviews. Another source of important secondary data to support literature as well as the experts' finding originated from historical data providers and governing bodies such as the FIFA, UEFA, Premier League or Transfermarkt.

4. Analysis and Discussion

As described in the literature review section, the role of luck and skill are at times ambiguous. This makes it often difficult to put a finger on the exact factors impacting and resulting in a certain outcome. On the basis of the data obtained from expert interviews, a more practical understanding is possible that allows us to contextualize the influences better.

4.1 Expert Interviews

4.1.1 Influence of Luck in Football

Similar to the literature review, the interviews were structured into different parts starting with the influence of luck. This is where the biggest discrepancy between experts was visible. Some of the experts did not fully believe in the concept or the influence of luck (Expert # 1, # 10), while others attributed about 40% of luck effecting a final result (Expert # 8). Where all experts agree is that football is a game of small margins and that more often games will be decided by a single event. That these single events are often led by the most skilled players was to no one's surprise. In this day and age, it is common that weaker teams want to make the game as random as they can, while more skilled teams try to control the game as much as possible. This increases the influence of luck on the outcome of a game. Eight out of 10 experts endorsed the idea that in cup competitions the likelihood of such upsets based on a greater influence of luck, is possible. This is also why you see domestic cup champions differing more than domestic league champions as the table below shows. These better teams often have to take greater risk as expectations are higher as teams come with better players. This at times leads to losing games a team should win (Expert #5).

Name of League	Premier League	Liga Bwin	Bundesliga	Serie A	La Liga
# Of Different Cup Winners	8	8	7	5	8
# Of Different League Winners	5	3	4	3	3

Table 3: Number of Different Domestic Cup Winners vs. Number of Different Domestic League Winners between 2005-2020 (Own Illustration)

All of the experts agreed on the significance of limiting luck and other random variables. There are different ways to do that. Nonetheless, all stressed the importance of preparation. Expert #1 stated that with the right preparation “70% of the work done”. There seems to be a mantra that everything can be planned, or we have to plan for possible contingencies. Nowadays the use of data analysis is more extensive with availability of 3.6 million data points per game (Amazon Web Services, 2022), and clubs trying to leave nothing to chance. Expert #6 described the relationship between luck and preparation as: “When you are not prepared, and you focus on your own game and ignoring what the opponent does, then you need to be lucky in order to succeed. Preparation is the key aspect in limiting the influence of luck. Then you can at least eliminate the need to be lucky”. Furthermore, teams nowadays have smarter understandings of different ways to play the game and play more to their strengths. It is not that necessarily everybody is getting better (Expert #5). There seems also to be a trend that players become savvier in requesting information around their game to reach the next level (Expert #7). Additionally, every expert agreed that the use of data analysis is an asset for both clubs and players and increases the likelihood of players reaching their potential.

Nevertheless, football is a low scoring game and thereby increasing the influence of luck compared to basketball where skill is more dominate (Expert #8). Combining this with the observation of no one will ever be able to eliminate the component of luck in football (Expert #2), less skilled teams are having greater chances of success than ever before. Five of the 10 experts also agreed that the decline of actual play time also favors the less skilled teams and increases the influence of luck. Another important aspect mentioned by Expert #3 was that less skilled teams in cup competitions must only overachieve/overperform for solely 90 or 180 minutes and instead of 34-38 games. Expert #7 shared the story of a former Leeds manager in the 1960’s: while being champions of Europe at the time Leeds lost to a lower table placed team and he did not want to congratulate them. He was calling them cheats alleging that they were cheating themselves, the coach, and the fans because when they outperform, they are cheating themselves through a season by not being able to perform like a top team every match. Even though the coach may have a valid point, the situation is a bit more nuanced nowadays. Events out of the team’s control can contribute to the outcome of a single match and variables such as luck will be part of the volatility of every performance (Expert #10). In the end, players start converging to their mean level of skill, not allowing teams and players to rely on luck over a longer period of time (Expert #1, #4). This is why short-term success is more difficult to plan for than medium or long-term success (Expert #8).

Finally, clubs cannot influence what the oppositions does, they can only prepare their players as effectively as possible, and the role luck plays is ambiguous (Expert #9). There will be single events within a game that determine the outcome. Because luck is controllable to a degree, players cannot determine a single event, but on a scale they can absolutely be luckier through the mental aspect (Expert #9). “There is nothing like a player that is consistently lucky rather somebody who consistently makes good bets therefore they get a positive return on that, and it appears that they are lucky. Elite players understand there is a probability if I take that risk there will be a better chance of a certain outcome” (Expert #9).

4.1.2 Influence of Skill in Football

Like in every sport, the most influential component deciding success or failure should be skill. “If a certain base level of skill were not important, everybody would or could be successful” (Expert #2). For 7 out of 10 experts, one of the decisive factors for who will win small margin games reduces to a situational moment of brilliance. When they were talking about a moment of brilliance, they often referred to a moment including a high level of skill (Expert #1). Most commonly these moments of brilliance come in form of unexpected goals. All goals are important but not all goals are equally important (Ankersen, 2018). The most important goal is the first goal. It is, oftentimes, the most difficult goal to score as both teams still believe in winning the game. That is where teams should rely on their most skilled players by giving their team the lead. In particular, through the increasing complexity of defensive systems. The first goal effect should be reinforced (Expert #7). After a goal, the complexion of the game often changes, mainly due to mental shifts (Expert #5). Some experts also mentioned that the most skilled players are the ones winning games and trophies for their respective teams (Expert #1, #3, #6, #7 & #9). Looking at the data of some of the most skilled attacking players in good teams tends to support this assumption and potentially underlines their importance for the team success. When these players open the scoring, their team tends to win 77% of the matches. For example, with Real Madrid, when Karim Benzema scores the first goal in a match, it is close to a guaranteed that the team will win, which has occurred 90.63% of the time over the last three seasons. The table below, only considering matches for their club and no games for their national team, illustrates this phenomenon.

Name of Player	# of Opening Goals	# of Wins after Scoring Opening Goal	Win % after Scoring Opening Goal
Messi	31	24	77.42
Ronaldo	37	30	81.08
Benzema	32	29	90.63
Lewandowski	36	31	86.11

Table 4: Number of First Goal Scored and following Win Percentage for their teams between 2018-2021 (Own Illustration)

What distinguishes the most skilled players even more is the impact they have on the team's performance when they are not playing. As Expert #10 stated, "One characteristic of these players is that even the best teams are weaker without their elite players and they make the best teams better". Considering some of the most elite players in the world, is higher generally based on a higher overall skill level of the team surrounding them. The table below considers domestic leagues such as the Champions' League group stage performances of respective teams as there are no points to gain in domestic cup competitions as well as in knockout matches. Considering the Champions' League group stage is possible, due to all of these players appearing every season.

Name of Player	Average Points with Player playing	Average Points without Player playing
Messi	2.32	2.21
Ronaldo	2.23	2.12
De Bruyne	2.35	2.06

Table 5: Average Points with and without highly skilled players of their respective team of the last five seasons 2016 - 2021 (Own Illustration)

Season	Expected Goals (xG)	Goals Scored
2020-2021	32.12	41
2019-2020	31.05	34
2018-2019	29.27	22
2017-2018	26.49	29
2016-2017	30.52	30

Table 6: Expected Goals of Lionel Messi from 2016-2021 (Own Illustration)

The data points to a certain dependency on their most talented players, even in some of the most skilled teams in the world. Additionally, at times it might not be reflected in the points a team wins, because just having such elite players in the team allows other players to reach their potential and show stronger performances (Expert #2).

Considering the skill level of players from a more individualistic viewpoint, differences are visible. Looking at exceptionally skilled talents, such as Lionel Messi, illustrates the effect skill can have and distinguishes virtuoso players from others over the long term. As the graphic below shows, Messi is the only player to consistently outperformed his expected goal value year over year. Over the last five years he even outperforms twice by ten goals. Performing over many years at such a level is only able when you are an elite athlete with a very high skill level. Developing consistency around self-awareness and understanding is what it means for a player who can deliver impact (Expert #9).

What makes his achievement more impressive is the fact that over this time period his teams

Season	Expected Goals (xG)	Goals Scored
2020-2021	25.65	30
2019-2020	21.63	25
2018-2019	25.49	36
2017-2018	32.54	33
2016-2017	26.65	37

Table 7: Expected Goals of Robert Lewandowski from 2016-2021 (Own Illustration)

were in constant transition, changing teammates and, arguably, he had players around him who were performing worse after each season. Comparing him to two other great players of our time Cristiano Ronaldo and Robert Lewandowski signifies the uniqueness of Messi's achievement. Thinking about the variance between expected goals and actual goals, causal phenomena such as the role of the luck are ignored. The most important statistic for an attacking footballer is uniformly to measure goals scored. As all these players won

the Champions League, and were championships in their respective domestic leagues, all

playing in the same or similar positions, these players statistics should be comparable in terms of goal output.

Season	Expected Goals (xG)	Goals Scored
2020-2021	28.34	29
2019-2020	27.32	31
2018-2019	21.65	21
2017-2018	29.00	26
2016-2017	24.68	25

Table 8: Expected Goals of Cristiano Ronaldo from 2016-2021 (Own Illustration)

Is the skill level of great significance in football? And do even elite players with a high level of skill depend on a certain degree of luck over time to achieve these numbers? From the perspective of the data, as well as taking into account the experts, highly talented players appear to be significantly less dependent on the component of luck

“What distinguishes elite performers, or experts, from the rest of us is that they advance beyond their natural plateaus through deliberate practice. Unlike routine and playful performance, deliberate practice pushes people to attempt what is beyond the limits of their performance” (Mauboussin, 2012).

This is in line with the experts’ opinions, as seven out of 10 identified as key factors differentiating average talented and highly talented players – focus, work ethic and the exceptional skill these players have in one or several areas. The ability to constantly challenging themselves, looking for ways to improve their game, allowing themselves as well as their teammates to become better were mentioned by 5 experts as indispensable for reaching a high level of skill and being able to perform consistently. Two of the experts spoke otherwise, saying that hard work beats talent if talent does not work hard. As a result of the answers given by the experts, high performance is only possible by implementing all aspects shown in the graphic. Since many players are missing one or more components, the number of highly skilled

performers over several years is low. This rarity in skill is one reason why clubs currently have to pay huge premiums for these players.

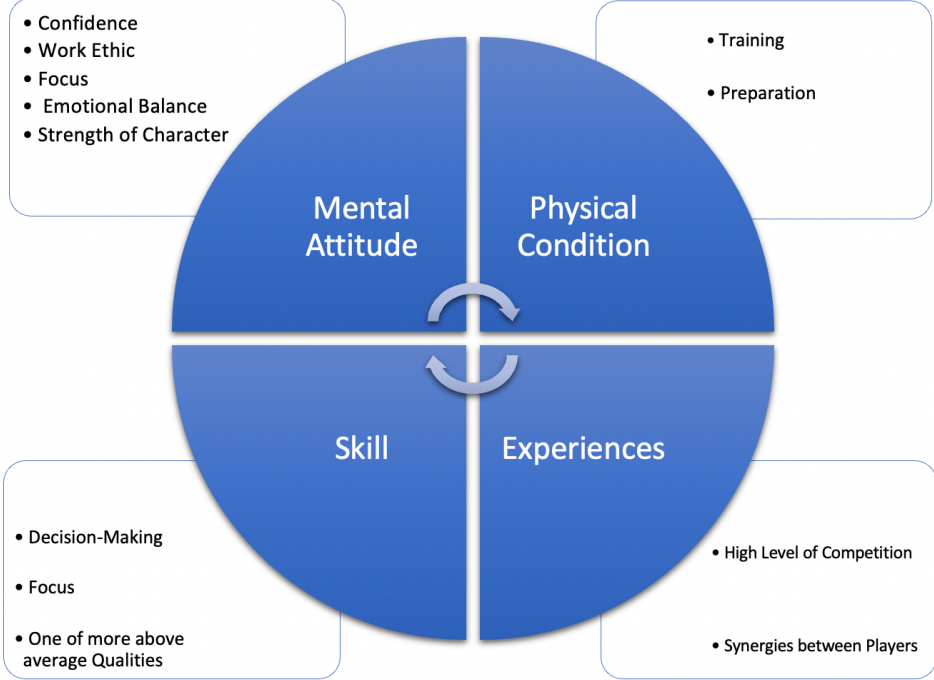


Figure 1: Components of Peak Performance (Own Illustration)

Looking at another crucial factor for highly skilled players, six out of 10 experts mentioned a clear vision and structure of an organization as being a vital and important competitive advantage for clubs and for players’ ability to perform to their maximum potential. Expert #4 suggested that out of the 100 best clubs, only about 15 have a documented long-term vision plan on how to develop skilled players, or statement of what they want to achieve, etc. In order to build such vision and structure several components need to come together. Clubs that are able to operate on a vision also establish a fostering environment for players to reach their full potential. “A competitive environment with better players surrounding highly skilled players, will most of the time result in a greater chance of fulfilling the player’s potential” (Expert #8).



Figure 2: Organizational Structure for Peak Performance (Own Illustration)

In some of the most prominent recent upsets, like the case of Leicester City and LOSC Lille, many of these components were fulfilled. Most experts attributed success of winning the domestic championship against significantly more skilled teams with greater financial resources, to a certain level of skill. Nonetheless, there are external factors such as a “freakishly low number of injuries” in the case of Leicester as well as no other competitions besides the domestic championship which influenced success in this instance (Expert #9). Success attributed to certain skill levels of the players, but if it had been primarily due to the skills, the success could have been repeated (Expert # 10). Another contributing factor is that neither of the teams was able to keep their key players and needed to rebuild their team structure. Four of the experts mentioned, that clubs are not able to make up adequately for loses of key players as they then have to buy worse players and get them up to the level of the previous player who was lost. Expert #5 described this dynamic as “The best teams become stronger and stronger, whereas the mid table ones need to be able to become weaker to become stronger”.

Eight out of 10 experts shared the same point of view – that the skill gap over the last years has narrowed. “The relative difference in performance is much smaller than it used to be because

of the evolution of football (coaches and players education, coaching methodology, physical development, global nutrition, data science, information available) and players athletic capacity of that (Expert #9)”. Football today depends more on the collective of a team rather than on the individual class of a single player. Good structure and clear vision allow smaller or less skilled teams to compensate for lack of skill or resources, to a certain degree giving them more chances than ever before to win against more skilled teams (Expert #8). However, it seems to be a paradox, since it was generally agreed by the experts that games are still decided mainly by most talented players. All experts stated that in the medium and long-term more skilled teams having arguably better players will perform significantly better in the league and be more successful. When it comes down to the most decisive variables of a game however, fans will see their most skilled players come through, performing a moment of brilliance that secures the win. Highly skilled players tend to focus more on themselves, particularly in situations when there are high stakes and a high reward (Expert #4). In the end, luck even is perhaps a kind of skill.

4.1.3 Influence of Competitive Advantages in Football

Football has similarities to business when it comes to competitive advantage (CA). CA exists to various degrees and it is often up to smaller firms or clubs to challenge established players. In order to do so, clubs and players need to find a specific niche where they are able to outperform and gain an edge over others (Expert #5). Financial resources also contribute to competitive advantage and higher wages result in long-term greater success. Looking at the Deloitte Money League report (2022), out of the top 15, 14 of them won a trophy within the last five seasons either in domestic or international competition.

Position in Football League	Clubs	Number of Trophies Won
1	Manchester City	10
2	Real Madrid	12
3	Bayern Munich	15
4	FC Barcelona	7
5	Manchester United	3
6	Paris Saint-Germain	15
7	Liverpool FC	5
8	FC Chelsea	5
9	Juventus Turin	9
10	Tottenham Hotspur	0
11	FC Arsenal	4
12	Borussia Dortmund	3
13	Atlético de Madrid	3
14	Internazionale Milano	2
15	Leicester City	2

Table 9: Trophies won by Top 15 clubs in descending order by Deloitte's Football Money League between 2017-2022 (Own Illustration)

Some of the more prominent cases where an increase in financial resources led to a more skilled team and finally resulted in trophies are Paris Saint-Germain and Manchester City FC. Both were acquired by wealthy owners and the fortunes of the club changed dramatically. Paris Saint-Germain and Manchester City FC were both rather mid-table clubs and nowhere near championship quality. As the illustration below shows, their positions within the standings and

the number of trophies won steadily improved as the market value and the level of skill of the teams improved as well. Increased financial spending including higher market value had a strong correlation with better positioning in the standings and the number of trophies won.

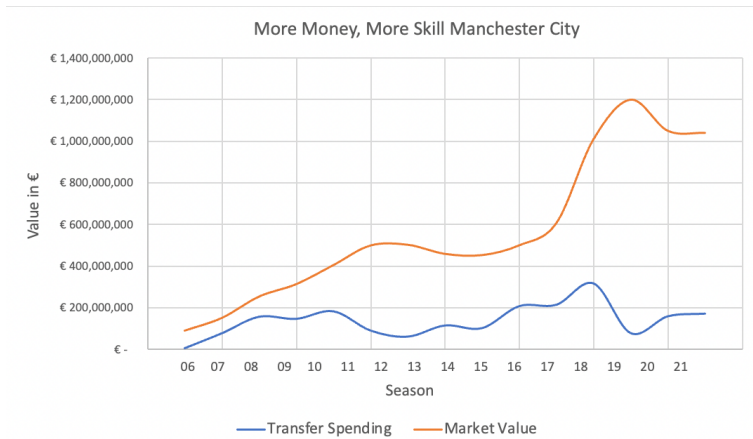


Figure 3: Relationship Transfer Spending and Market Value Manchester City (Own Illustration)

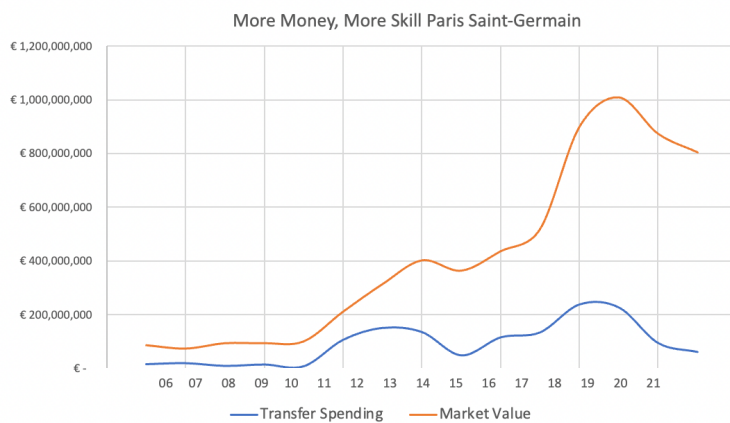


Figure 4: Relationship Transfer Spending and Market Value Paris Saint-Germain (Own Illustration)

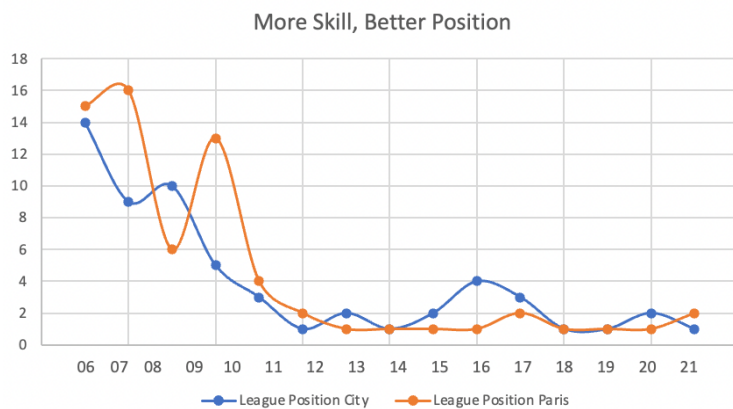


Figure 5: Final League Position Manchester City and Paris Saint-Germain from 2006 until 2021 (Own Illustration)

Other research (Dobson & Goddard, 2010; Wilson et al., 2013; Pawlowski, Breuer & Hovemann, 2010; Barros & Leach, 2007) supports this correlation, demonstrating how competitive advantage can be gained through with financial resources. This points to the notion

League	Number Champions League won
Liga BBVA	11
Premier League	6
Serie A	5
Bundesliga	4
Ligue 1	1
Liga Bwin	1
Eredivisie	1

Table 10: Number of Champions League won for each League since 1992 (Own Illustration)

that clubs can buy their way to trophies by deploying monetary resources towards increasing skill levels of their teams. Expert #5 held that the skill level between elite players and merely skilled players is widening, contrary to the idea that the overall skill gap is shrinking. For clubs nowadays to acquire these top-level talents, they have to spend increasingly large amount and only a limited number of clubs are able to pay these prices. There is a greater concentration of top-level players at a small number of clubs as the result (Expert #9). Expert #10 noticed a change over the years in the concentration of highly skilled players. He claimed that players on the bench of the top five teams in the Premier League would be starters at each of the other Premier League teams. If he compared that to the late 1990's or early 2000's most of these players would not have played in most of the mid-table teams. His explanation was that there are physically more demands in the game of football and

that the top teams are focusing on having high skill levels throughout their whole team, whereas most average teams are not capable of paying the necessary wages and transfer fees to attract the highly talented players. Having the ability to change players without any or only a minor drop in the skill level is a significant competitive advantage. In addition, this allows for better load management, where players will be fresher physically as well as mentally. This enables better decision-making on the pitch which is one of the most important skills of elite players (Expert #9).

Competition is another aspect experts stressed for developing higher skill levels as well as for being able to perform consistently to maximum potential (Expert Interview #3, #7, #9). As Pawlowski, Breuer and Hovemann (2010) already stated, the level of competition is important

for successful player development and provides players with challenges and resistance necessary to make it the next level. Overall, this increases the attractiveness of a football league, as players seek to play with the best and compete against the best (Expert #5). As Expert #1 said, teams and players win championships because of the environment they are in. Ultimately, the most prestigious international competition, the Champions League, since its introduction in 1992 was won most often by the arguably still two best leagues in the world based on UEFA's current 5-year rating (2022). This rating ranks overall performance of each league's representative teams in international cup competitions.

With the large amount of data available, it is becoming increasingly important to filter critical data to make the best possible decisions. There seems to be a trend that players become savvier in requesting information around their game to reach the next level (Expert #7). Generally, there is a risk of making bad decisions based on biases. In modern football scouts and executives still fall for the same biases as everyone else does in business (Expert #4). The best thing is to look at particular performance trends and try to avoid these trends by being aware of biases existing around them (Expert #4). One reason is that it becomes exceedingly difficult to judge players over a short period which increases likelihood of biased decision (Expert #6). Expert #4 mentioned recall bias as one of the most prominent biases. Both he and a lot of scouts often end up solely remembering the last great goal or blatant miss of a player. Another bias is that clubs tend to overestimate performance of players coming from the same country or possessing other similarities with regard to what the club is looking for. Players should be chosen based on fit for the team and not solely on the player performance (Expert #4). The best thing to do is to use data to confirm or deny perceptions a club has of a certain player (Expert #6). Although, even with data there are lots of biases in the assessment of skill (Expert #3). Going full data does not work as there are too many other aspects to take into consideration which are difficult to control (Expert #5). In the end, it will be the same as for most other competitive advantages – when someone has an edge, people will go out and find either the antidote or copy and improve it (Expert #7). If a particular style of football becomes too popular, nowadays other teams are very quick to adapt and over time your competitive advantage shortens (Expert #3).

5. Conclusion

This final chapter describes the overall conclusions of this dissertation, states limitations with regard to this research, as well as making suggestions for future research to expand on this work.

5.1 General Conclusion

The aim of this dissertation was to explore under-researched influences of luck and skill in football. As ubiquitous components of the game, it is at times difficult to distinguish whether it was a moment of pure skill from a player or rather a confluence of skill and luck, or simply lucky circumstances. The aim of this dissertation was to make the distinctions between these clearer. With regard to the first research question, it can be said that luck does play a role, especially in the short-term. When only considering a small sample of games, luck will definitely have a larger influence on the outcome. By the very nature of football, being a low scoring sport with significantly fewer attempts to make a goal, luck plays a larger role than in other sports, such as basketball. As the skill gap has narrowed over time due to the evolution of football in areas like coaches and players education, physical development, or data science, it often becomes more difficult for the most talented team to win games. This allows for a larger number of upsets and in the short-term more compelling matches. Interestingly, expert interviews indicated a relationship between luck and skill. Most of the experts attributed highly skilled players to being luckier more often. This related mainly to being in the right place more often or making the right decisions more consistently. Therefore, it seems like to a certain degree highly skilled players are able to force or attract luck more often. In the case of absence of the highly skilled players, data suggests a decrease in performance of the entire team which in the analysed cases is often still superior to opponents. The exact reasons for this phenomenon would be extremely interesting to research in the future.

Overall, the research findings indicate that if we look at a longer time period, the importance of luck decreases and the importance of skill increases. If teams play often enough there seems to be a regression towards the mean in skill level. Since the skill level is often higher at clubs with greater financial resources, these teams often manage to win the most titles at the end of the season. Luckily, there are still some exceptions like Leicester City or LOSC Lille, however successes are only partially attributable to the skill levels of these teams. It is rather about having a certain competitive advantage for some time, in these cases around one season, and afterwards teams struggle to replicate success as players leave or opponents are better prepared in the next season. A factor that should not be neglected is the importance of the organization. The club structure, vision, as well environment seems to enable players individually along with the entire whole team to overperform for a longer period. This suggests the collective of many

individuals being greater than an individual player's abilities. In these cases, there seems to be a certain momentum towards luck and teams can have a winning run for a whole season and end up winning the league to everyone's surprise. All in all, skill is a main competitive advantage on its own and more often is the driving force in a player or team's success. Nevertheless, the combination of both luck and skill does enable some magical moments many football fans will probably remember and maybe even cherish forever.

5.2 Limitations

It is important to bear in mind that this research was subject to limitations. Due to the current Covid-19 situation it was only possible to conduct interviews via video calls. Being in this situation and not being able to meet the interviewees in person might have influenced their respective answers. In addition, it is important to keep in mind, that opinions, especially on sports, are often very subjective. Since experts also had different backgrounds and experiences all of them brought distinctive perspectives and perceptions to the table. Furthermore, the number of expert interviews (10) is a relatively small sample size. For more conclusive findings a larger sample size is needed.

Based on this being qualitative research it is extremely difficult to get concrete numbers with regard to results. Both, luck and skill are difficult to measure as their concepts and perception varies across different people. This only allowed for indications and correlations between different findings. Some experts stressed this limitation as well in their professions, as some aspects of luck and skill are more human components and very difficult to quantify (Expert #8). Furthermore, this research was conducted over four months. For more valid research, a longer amount of time is preferable. Another limitation was lack of available literature. Analyzing the influences of skill and luck is rather new within the football industry. That is why most of this dissertation's work is more likely a mere foundation offering a framework for future research.

5.3 Suggestions for Future Research

Luck and skill definitely demand further research. In the future it would be interesting to find out more about how players are able to create luck as well as to what degree luck is controllable and how are teams exposed to influences of luck. Another interesting point of research would be knowing to what extent it is possible to quantify luck in football. In order to have a deeper understanding of the luck and skill relationship, further research regarding the ability to attract

luck or if it is mainly a mental aspect would be interesting. As for the skill component, further research into areas of skill transferability would be useful. Quantifying the comfort level of players within a team is another interesting aspect, since it seems that the environment has a strong influence on players performance and skill potential.

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7. Appendix

Total self-belief
Wanting the ball at all times
Having the ability to react to situations positively
Hang on and be calm under pressure
Know what it takes to grind self out of trouble
Ignore distractions and remain focused
Control emotions
Have presence that affects opponents
Have everything out of game in control
Enjoy performance pressure

Figure 6: *Components of mental toughness in professional soccer (Own Development according to Thelwell et al. 2005)*

	Messi	Ronaldo	De Bruyne
Matches Played	196	179	168
Points Matches with Player	454	400	395
Average Points with Player	2.31632	2.23463	2.35119
Matches Missed	24	41	52
Points Matches without Player	53	87	107
Average Points without Player	2.20833	2.12195122	2.05769

Table 11: *Data Average Points with and without Player (Own Illustration)*

Season	Penalties Scored	% of Penalties Scored	Penalties Saved/Missed	% of Penalties Missed/Saved
2020 – 2021	102	82.26	22	17.74
2019 – 2020	72	78.26	20	21.74
2018 – 2019	84	81.55	19	18.45
2017 – 2018	56	65.71	24	34.29
2016 – 2017	81	76.42	25	23.58
2015 – 2016	74	81.32	17	18.68
2014 – 2015	63	75.9	20	24.10
2013 – 2014	73	83.91	14	16.09
2012 – 2013	66	79.52	17	20.48
2011 – 2012	71	71.72	28	28.28
2010 – 2011	79	78.22	22	21.78
2009 – 2010	86	77.48	25	22.52
2008 – 2009	67	80.72	16	19.28
2007 – 2008	61	74.39	21	25.61
2006 – 2007	87	80.56	21	19.44
2005 – 2006	56	76.71	17	23.29
2004 – 2005	62	83.78	12	16.22
2003 – 2004	66	83.54	13	16.46
2002 – 2003	55	85.94	9	14.06
2001 – 2002	47	89.36	5	10.64
2000 – 2001	52	91.23	5	8.77
1999 – 2000	64	96.97	2	3.03
1998 – 1999	48	90.57	5	9.43
1997 – 1998	57	93.44	4	6.56
1996 – 1997	61	95.31	3	4.69
1995 – 1996	52	94.54	3	5.46
1994 – 1995	65	94.2	4	5.80
1993 – 1994	80	97.56	2	2.44
1992 – 1993	57	93.44	4	6.56

Table 12: *Penalties Scored and Penalties Saved between 1992 and 2021 (Own Illustration)*

Season	Number of Penalties For	Club	Position at the End of the Season
2020 – 2021	12	Leicester City	5
2019 – 2020	14	Manchester United	3
2018 – 2019	12	Manchester United	6
2017 – 2018	10	Crystal Palace	11
2016 – 2017	10	AFC Bournemouth	9
2015 – 2016	13	Leicester City	1
2014 – 2015	8	Manchester City	2
2013 – 2014	12	Liverpool FC	2
2012 - 2013	11	FC Chelsea	3
2011 – 2012	11	Manchester United	2
2010 – 2011	9	Manchester City	3

Table 13: Team with the Most Penalties Awarded in the Premier League between 2010 -2021 (Own Illustration)

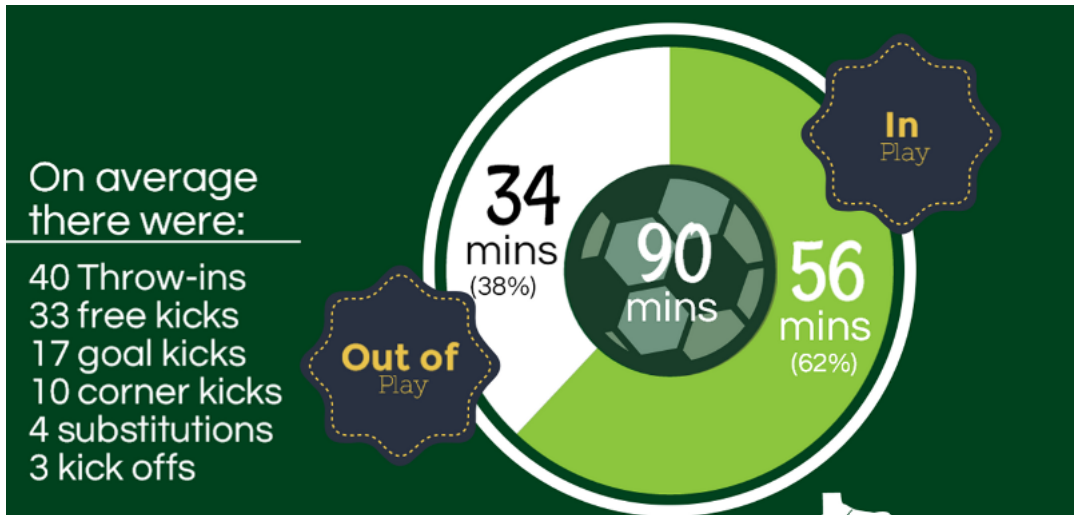


Figure 7: Average Interruptions during a Football Match (5-A-Side, 2022)

Penalty Stats 1992-93 to 2021-22	
Home Penalties %	61.18
Away Penalties %	38.82

Table 14: Penalties Scored and Penalties Saved (Own Illustration)

Expert Interview # 1	
Deciding factors who is winning with two relatively equal teams playing each other?	<ul style="list-style-type: none"> - Down to preparation, understanding who you come up against is 70% of the work done - One moment of brilliance, often from most skilled players - Having a clear plan, vision, and structure of what they want to achieve
Role of Luck in Football	<ul style="list-style-type: none"> - Big believer in make your own luck, “Luck is something you create and earn” - Does not think titles or games are decided on luck - Over a large period of time, you cannot rely on luck
Relationship between Luck and Skill	<ul style="list-style-type: none"> - Luck are only moments, often ignoring the circumstances where pure skill leads up to luck - It takes a large amount of skill to generate that luck - If you do not execute the action every day, you will never get lucky - Continuity breeds success
Leicester and Lille, can you be Lucky for a whole Season?	<ul style="list-style-type: none"> - Win championships because of the environment you are in - If the more skilled team shows the same passion and camaraderie, they will win 9 out of 10 times - The best team won that season, due to their environment paired with passion and a certain amount of skill
How to objectively assess Skill in the Shadow of Luck?	<ul style="list-style-type: none"> - Still the outcomes fluctuate but by continuously doing the right things you can control the outside factors as much as possible - That is why there will be always a regression to the mean, you just need to have long enough time frame
Impact of Data Analysis on Luck and Skill in Football	<ul style="list-style-type: none"> - The amount of information whether it is scouting, development, measuring the performance helps every club and player - Enables not only highly skilled players to succeed
Influences Organisations have on Player’s Skill	<ul style="list-style-type: none"> - The environment is everything - If coaches and staff do not create an environment of happiness and joy allowing players to feel free and confident, expressing themselves as an individual not able to perform - Having these unique players is what brings teams over the line winning games and trophies
Influences enabling Peak Performances	<ul style="list-style-type: none"> - Most skilled/ best performing players understand that if they do not train and keep practicing, those moments of luck will run out - You have to try to eliminate every outside influence/distraction, which is more difficult nowadays than ever before - The repeatedness of an exercise/action often leads to the success of similar actions during the match
Skill Gap in Football	<ul style="list-style-type: none"> - Skill gap is closing - Better access to data/information for everybody - Everybody enjoys a similar education if you have a certain skill level
Why highly Skilled Players fail, less Skilled Players succeed?	<ul style="list-style-type: none"> - The work you do outside the pitch will bring you over the line - The 80% of what you are doing off the pitch is determining your success - Less skilled often have a better understanding of what they need to do to succeed
Honourable Mentions	<ul style="list-style-type: none"> - Due to current development structure, we are losing players that play the game completely different – losing astatic value that is making elite players unique - For a football club in order to be successful, it is a combination of sporting excellence from an administration perspective (Sporting director, coach, staff), finding the right players with the right attitude and willingness to work

Table 15: Transcript of Expert Interview Number 1 (Own Development)

Expert Interview # 2	
Deciding factors who is winning with two relatively equal teams playing each other?	<ul style="list-style-type: none"> - Teams do struggle when they are moving away from their standard system, losing structure and important mechanisms - Willingness is an important factor with regard to how you approach the game and the level of preparedness - Increasing importance of set pieces
Role of Luck in Football	<ul style="list-style-type: none"> - You will never be able to eliminate the component of luck in football - Start believing in forcing luck even though it is not possible of course
Relationship between Luck and Skill	<ul style="list-style-type: none"> - You need luck in order to create momentum - When you are lucky which is unpredictable still requires a certain skill; you have to try to build on that and create a momentum for yourself attracting more luck
Leicester and Lille, can you be Lucky for a whole Season?	<ul style="list-style-type: none"> - Team structure, how they treat each other, combined with a coach promoting the players skills such as team importance led to success - You need a certain base level of skill sure but can still be successful because of other components you are superior in, like team composition or a performance fostering environment - If a certain base level of skill would not be important, everybody would or could be successful - Skill could not have been the decisive factor for their success as lots of players struggled the next season
How to objectively assess Skill in the shadow of luck?	<ul style="list-style-type: none"> - Football still allows to evaluate players decently well as looking at other sports they tend to be shorter such as individual players have less play time (NHL around 20, NFL maximum 60, NBA need to check) and football player show their abilities for 60 to 90 minutes every week once or twice - You are still able to generate enough data point to assess player's performance
Impact of Data Analysis on Luck and Skill in Football	<ul style="list-style-type: none"> - When you solely look at the data, they will not tell you what kind of character/person the players are
Influences Organisations have on Player's Skill	<ul style="list-style-type: none"> - Most important thing in order to be successful is having a good organisational structure - Environment, personality, show support having the feeling of being needed, trust and valued is crucial for players to peak perform - When you play with better players you will be able to adjust to their level allowing to fully reach your potential. It is nourishing your own development
Influences enabling Peak Performances	<ul style="list-style-type: none"> - Skill offers a certain basis. This can already be a distinctive factor as some of them have such abilities, others will not be able to reach even through training - When you play in a weaker team it is more difficult to stand out and perform to your potential - Players have to demand the maximum of each other
Skill Gap in Football	<ul style="list-style-type: none"> - Worse teams are better prepared for their opponents and show a greater willingness to win the game - It is easier to train a solid defence rather than training a creative offense
Shift from Individualistic game to Team Game?	<ul style="list-style-type: none"> - Nowadays football is more about the collective effort of the team rather than individualistic performances
Why highly Skilled Players fail, less Skilled Players succeed?	<ul style="list-style-type: none"> - Having such elite talent might reduce the importance of players readiness or a player's personality - Attitude towards the game is important and highly skilled players lose that winning attitude with the wrong environment allowing less skilled to be more successful than them
Honourable Mentions	<ul style="list-style-type: none"> - Football thrives on creativity; other sports are less dependent on creativity as most of it is planned

Table 16: *Transcript of Expert Interview Number 2 (Own Development)*

Expert Interview # 3	
Deciding factors who is winning with two relatively equal teams playing each other?	<ul style="list-style-type: none"> - Tactics and try to control randomness as much as you can - Players with a certain skill level that are on the pitch - Decision-making of coaches and players - How players are carrying out instructions
Role of Luck in Football	<ul style="list-style-type: none"> - Maximising what is under their control so players will be prepared for game decisions/happenings and make the right decision as often as possible. In this way players are able to reduce the influence of luck as much as possible
Relationship between Luck and Skill	<ul style="list-style-type: none"> - Luck is playing greater role in cup competitions - Fans play role in home advantage - Quality will show and succeed over the long run (over a season) - Luck is a much bigger factor for cup games and small margins are more important as luck can have a greater impact and at times help the less skilled team - Other teams in cup only have to overachieve/overperform or adjust for solely 90 or 180 minutes and instead of 34-38 games
Leicester and Lille, can you be Lucky for a whole Season?	<ul style="list-style-type: none"> - More successful teams have an approach that is consistent throughout the whole club, and they were perfectly clear in their vision for what they want to do - For winning to league and need specific things and if a team has them, they can win the league both teams had all the components (20-25 goals striker, squad harmony, player ambition, and key players were playing in key positions)
How to objectively assess Skill in the shadow of luck?	<ul style="list-style-type: none"> - Clubs and scouts often take too small of sample sizes in their assessment - Even with data there are lots of biases taking place in the assessment of skill
Impact of Data Analysis on Luck and Skill in Football	<ul style="list-style-type: none"> - Relevance of data and questions is most important for you to find the answers - You should not overestimate form of a player - Good sample size for him is last 3 seasons to see at which stage they are the moment
Influences Organisations have on Player's Skill	<ul style="list-style-type: none"> - Create environment where player can play natural game - If team has consistent and clear idea of every player on the pitch and their role that is important for the players development and ability to perform
Influences enabling Peak Performances	<ul style="list-style-type: none"> - Player skill and specific style of a team are both equally important - Trying to accommodate players in system is crucial - Elite players do not leave a stone unturned to succeed and become better
Skill Gap in Football	<ul style="list-style-type: none"> - Skill gap where clubs with most clubs will always buy best players will always pay off in the long run - Closed over last years, due to greater data availability and better education of players such as coaches
Shift from Individualistic game to Team Game?	<ul style="list-style-type: none"> - It is becoming more of a team game and about finding the right team and doing your specialised role very well
Why highly Skilled Players fail, less Skilled Players succeed?	<ul style="list-style-type: none"> - Player's mentality combined with nowadays increasing pressure (more pressure for highly skilled players as expectations are greater) - Each player has different peaks, players and clubs more impatient with each other and if a player peaks at the wrong time they are out - In today's day and age clubs and players often do not find the team or players that allows them to play their natural game, setting both up for failure
Honourable Mentions	<ul style="list-style-type: none"> - High level of competition in your domestic league is critical for good performance in international cups such as the Champions League - Teams more successful having solid core with 1-2 elite level of skill players - Having players that do the hard work being a cog in the machine/the system function is crucial for elite players to peak perform - If a particular style of football becomes too popular, nowadays other teams are very quick to adapt and the time you have a competitive advantage shortens

Table 17: Transcript of Expert Interview Number 3 (Own Development)

Expert Interview # 4	
Deciding factors who is winning with two relatively equal teams playing each other?	<ul style="list-style-type: none"> - The talent pool you have on the pitch and their respective skill level - The combination of different skills and how they are able to express their skills - Luck especially in small margin games
Role of Luck in Football	<ul style="list-style-type: none"> - Luck will be part of the volatility in performance but in the end, you start converging to your mean level of skill - Nonetheless, clubs and players need a minimum amount of luck to be successful, as this allows both to be mentally at their peak as well
Relationship between Luck and Skill	<ul style="list-style-type: none"> - Luck plays a bigger role for average players as for the elite players - As the skill gap between average skilled premier league players such as highly skilled second division players the skill gap is rather small - In the long run the better the players, the better your performance in league
Leicester and Lille, can you be Lucky for a whole Season?	<ul style="list-style-type: none"> - It is easier to perform every week when you only have league games - Can be physically fresh every week, paired with a low number of injuries - Both teams had a great coach with the ability of putting players in their natural positions allowing the good combination of skill to increase each players performance potential
How to objectively assess Skill in the shadow of luck?	<ul style="list-style-type: none"> - Look at least 30 games of players performing - Look at particular performance trends and try to avoid these trends by being aware of biases existing around them - Such as recall biases (only remembering last great or horrendous actions of players) - Clubs tend to overestimate the performance of players, which have the same nation or any similarities with regard to what the club is looking for, simply as the should fit the team better and make decision not based on the player's performance
Impact of Data Analysis on Luck and Skill in Football	<ul style="list-style-type: none"> - The more the market is competitive, the less of a role luck plays - Smaller margins and low scoring games makes it more difficult to attribute success to certain players compared to other sports like basketball - The number of players team are scouting is way larger for football than in any other sports because of the larger number of leagues and teams - NBA and NHL have around 30 teams and some high school/college teams, it is easier to scout and focus on a smaller number of players
Influences Organisations have on Player's Skill	<ul style="list-style-type: none"> - It is the club's responsibility to make sure that their players are performing in the best possible manner (Physically, mentally, and emotionally ready to play, play tactics that best suits the player) - Setting up systematic way for players to improve their skills and pairing that with exposing them with enough experiences where they are facing resistance
Influences enabling Peak Performances	<ul style="list-style-type: none"> - Putting players where they are the best, a teams' playing style needs to match the players' playing style - Player's confidence, as it is vital for highly skilled players to be confident in order to be able to take risks and express skills on the pitch
Skill Gap in Football	<ul style="list-style-type: none"> - Not sure if it is closing - But overall skill as in other sports is definitely improving - As organisations are more and more professional, youth development becomes better such as easier accessibility to a greater pool of players
Shift from Individualistic game to Team Game?	<ul style="list-style-type: none"> - Having one or two individualistic players is important as these players tend to have a greater creative skill - But having a core around them is important as well - Highly skilled players tend to focus more on themselves a bit in situations where there are high stakes and a high reward
Why highly Skilled Players fail, less Skilled Players succeed?	<ul style="list-style-type: none"> - Tendency nowadays to hype players way too much, way too early - It is like investing in startups, some of them look great and perform but still end up bankrupt because of uncontrollable factors - Luck definitely plays a role for both
Honourable Mentions	<ul style="list-style-type: none"> - He assumes out of the 100 best clubs, only about 15 have a document or long-term vision with a plan on how to develop skilled players, what they want to achieve and so on - Lots of teams are sleeping on that and lose their competitive advantage

Table 18: Transcript of Expert Interview Number 4 (Own Development)

Expert Interview # 5	
Deciding factors who is winning with two relatively equal teams playing each other?	<ul style="list-style-type: none"> - Very specific detail moments like set pieces which become more and more important - The team that is paying more attention to the details and perform the details a bit more efficiently is the once winning these games
Role of Luck in Football	<ul style="list-style-type: none"> - You need a little bit of luck to be seen and playing well - You help yourself when you try to eliminate luck by training at a high level all the time
Relationship between Luck and Skill	<ul style="list-style-type: none"> - Highly skilled teams are playing very risky and that is why they do not win the champions league frequently as teams nowadays can beat every opponent on any given day - Teams are not, not winning because of luck. As it is the other team's skill by taking their chance in a moment
Leicester and Lille, can you be Lucky for a whole Season?	<ul style="list-style-type: none"> - These better teams have to take a greater risk as their expectations are higher as with it comes you have better players. This at times leads to losing games they should win
How to objectively assess Skill in the shadow of luck?	<ul style="list-style-type: none"> - You need a bit of luck, but luck doesn't necessarily have to happen on the football pitch (Family healthy, finding nice apartment, not getting injured) - One player can be elite, but still needs all the others to fulfil their roles as a support cast, if one of them does not fulfil their role it is difficult to distinguish
Impact of Data Analysis on Luck and Skill in Football	<ul style="list-style-type: none"> - You can be a very average team with an average skill level and get results by scoring on a set piece and doing the details right - Some of it is due to data and the way you see teams today positioning themselves - Trying to mitigate risk as much as possible - Putting a bunch of data sources together and try to make a decision as objective as possible - Going full data does not work as there are too many other aspects to take into consideration which are difficult to control
Influences Organisations have on Player's Skill	<ul style="list-style-type: none"> - Player needs to have confidence, he needs to understand what he has been asked to do, what his role is and how he should do it - Coach needs to put players in the position to succeed. - Making them understand where they can have success - When one of these things go wrong it will impact all the other ones
Influences enabling Peak Performances	<ul style="list-style-type: none"> - Clubs have the most impact on a player's performance - That is why you see highly skilled players succeed in well-structured club like Liverpool FC, while in unstructured clubs like Manchester United players struggle to adopt and perform - Highly skilled players need to be put into an environment where they are constantly challenged and competing - In today's day and age, you cannot have someone that does not work hard to be elite that work ethic allows these players to consistently perform at such high level and separate themselves
Skill Gap in Football	<ul style="list-style-type: none"> - Teams nowadays get cleverer understanding there are different ways to play the game and playing more to their strengths. It is not that necessarily everybody is getting better
Shift from Individualistic game to Team Game?	<ul style="list-style-type: none"> - Today you see more teams having success without the 1% players like Messi or Mbappe - They don't have world class players, but they have a sound system, and they do the details and specifics very well. That is where the game is trending towards to - You are only as good as your weakest link and not you are as good as your best player - There is probably a combination of one, do you have some very special skill or second, do you have three or four skills you above average at that allows you to be in that elite category
Why highly Skilled Players fail, less Skilled Players succeed?	<ul style="list-style-type: none"> - It is more difficult for players to adapt that were used to play a specific way - Players with a weaker work ethic are going to be found out more and more in today's day and age
Honourable Mentions	<ul style="list-style-type: none"> - Everything is very structured, they overcoach, players are robotic and that makes it difficult for creative players to really come out and showcase themselves - The less the ball is in play, the more of a chance the less skilled team will have to keep the game they want it

Table 19: Transcript of Expert Interview Number 5 (Own Development)

Expert Interview # 6	
Deciding factors who is winning with two relatively equal teams playing each other?	<ul style="list-style-type: none"> - Tactics of the game predefined by the coach - A specific understanding of the players can exploit weaknesses and use their own strengths - Comes down to details and small margins - Form of the day as performance fluctuations are common
Role of Luck in Football	<ul style="list-style-type: none"> - There is not much luck involved - In the modern football everybody tries to limit the influence of luck nonetheless
Relationship between Luck and Skill	<ul style="list-style-type: none"> - When you are not prepared, and you focus on your own game and ignoring what the opponent does, then you need to be lucky in order to succeed - Preparation is the key aspect in limiting the influence of luck - Then you can at least eliminate the need to be lucky
Leicester and Lille, can you be Lucky for a whole Season?	<ul style="list-style-type: none"> - It is mainly a combination of hard work, talent (as both still possessed a specific skill level) paired with a strong analytical performance in preparation and training - If you score in the last five minutes once a team or player might be lucky, but if they do it several times it is skill
How to objectively assess Skill in the shadow of luck?	<ul style="list-style-type: none"> - Looking at the world cup or European cup, often the elite players are drained from a demanding season - Less talented players then are often in a better physical shape and show strong performances - The problem is they are not able to keep the higher performance level form for a longer period such as more skilled players do - Exceedingly difficult to judge players over a short period and the likelihood of biased decision increases by such events - Use data to confirm or deny the perception a club has of a certain player
Impact of Data Analysis on Luck and Skill in Football	<ul style="list-style-type: none"> - Comes down to the small percentages you can gain over other teams - Data analysis nowadays offers the opportunity to gain a competitive advantage - It especially helps players and coaches to prepare in order to minimise the risk of being unlucky and trying to attract luck when the opportunities arise
Influences Organisations have on Player's Skill	<ul style="list-style-type: none"> - All players and also highly skilled players can only perform at their best when they feel 100% appreciated and supported by their environment - A good fit within the team structure is inevitable for every player to perform and it is the organisation's responsibility to provide them with such
Influences enabling Peak Performances	<ul style="list-style-type: none"> - It appears as people at times forget how hard highly skilled players still have to work - They are different in how they prepare for a game - Constantly think about the game and how to improve - Elite players combine talent with hard work and focus
Skill Gap in Football	<ul style="list-style-type: none"> - Depends on the competition and league - Premier league is always competitive and has a close skill gap - That is where you need to be lucky at times as well for success and the potential for upsets is greater in a league like this - Generally, a narrowing skill gap is apparent
Shift from Individualistic game to Team Game?	<ul style="list-style-type: none"> - Most definitively yes, as teams still need their most talented players to do something special for them but the team around that individual becomes more important - As the physicality of the game becomes more demanding and more difficult for individuality to come through - Elite players are still winning the games for their team most of the time
Why highly Skilled Players fail, less Skilled Players succeed?	<ul style="list-style-type: none"> - It is often one specific attribute that is special getting them above all others - Nonetheless, hard work beats talent if talent does not work hard - Losing the ability to Keep focus on the game hinders talented players often to succeed
Honourable Mentions	<ul style="list-style-type: none"> - For every decision, in the end it still comes down to the human eye and what and how the manager feels about players

Table 20: Transcript of Expert Interview Number 6 (Own Development)

Expert Interview # 7	
Deciding factors who is winning with two relatively equal teams playing each other?	<ul style="list-style-type: none"> - The coaches' vision and tactical philosophy - A single moment or situation of individual skill - The cohesiveness of the respective teams
Role of Luck in Football	<ul style="list-style-type: none"> - Luck is a reason to excuse why certain events or performances they have no control over have a negative outcome - Luck is where opportunity meets preparation - What appears to be luck, often times is simply good preparation
Relationship between Luck and Skill	<ul style="list-style-type: none"> - Nearly every situation can be explained and has a certain objectivity to it allowing - Often it is rather a lack of skill with regard to decision-making than luck - The better prepared a player is, the luckier he gets - In cup competitions it happens more frequently that teams are underestimating opponents which is the worst thing to do; implying that you are psychologically not in the right mind set, will not be ready to physically to as much as required
Leicester and Lille, can you be Lucky for a whole Season?	<ul style="list-style-type: none"> - Teams set up differently just negate one player and increase the likelihood of winning some points - Both were not lucky but overperformed and able to play the most effective playing style for them - Other teams underperformed and did not really challenge these teams
Impact of Data Analysis on Luck and Skill in Football	<ul style="list-style-type: none"> - Players become savvier in requesting information around their game - There is better access and availability to data necessary to evaluate players all over the world
Influences Organisations have on Player's Skill	<ul style="list-style-type: none"> - The organisation's role is vital; a player is not able to perform if the organisation is not finding a way to best utilise their skills - Elite players have to be accommodated as good as possible - That allows elite players to utilise their strengths even if that means other parts of the team have to compensate for them somewhere - It has to go both ways, so that the highly skilled players are elevating the team's potential but also the team around these players have to step up and push and challenge the elite players more allow all to unlock new parts of their game
Influences on Peak Performances	<ul style="list-style-type: none"> - Player has ultimately main responsibility in being prepared, be in best possible condition, train well and gain confidence - Highly skilled players develop with time and most importantly experiences at the highest possible competition level - Highly skilled players find ways to maximise the impact they can have on the team such as on the game
Skill Gap in Football	<ul style="list-style-type: none"> - The skill gap has narrowed as coach education is better, players are exposed to more tactical nuances and enjoy better game preparation - Less skilled teams have better support structure
Shift from Individualistic game to Team Game?	<ul style="list-style-type: none"> - You do see more expressive players and them using their skills as weapons and decisive quality to win matches and championships - Highly skilled player become more influential as they become more often the decisive factor in winning a game as defensive systems have become far more complex
Why highly Skilled Players fail, less Skilled Players succeed?	<ul style="list-style-type: none"> - Highly skilled players often have certain psychological aspects to themselves that turn out to be more challenging with regard to transferring their skill level on to the pitch such as a difference in intrinsic motivation - Clubs will nowadays try to maximise the value of young highly skilled players exceedingly early - This can create opportunities for these players to perform and go on having a career but also creates a false sense of great achievements even though these players did not really achieve anything
Honourable Mentions	<ul style="list-style-type: none"> - As for all other things certain advantages such as tactical advantages, people will go out and find the antidote

Table 21: *Transcript of Expert Interview Number 7 (Own Development)*

Expert Interview # 8	
Deciding factors who is winning with two relatively equal teams playing each other?	<ul style="list-style-type: none"> - Influence of luck around 40% of events in football are influenced by luck - Preparation using the best players to exploit the opponent's weakness
Role of Luck in Football	<ul style="list-style-type: none"> - Football is underestimating the influence luck has - Even while the football continued to evolve the influence of luck remained unchanged around 40%
Relationship between Luck and Skill	<ul style="list-style-type: none"> - Football is a low scoring game and therefore increasing the influence of luck compared to basketball where skill is more dominate
Leicester and Lille, can you be Lucky for a whole Season?	<ul style="list-style-type: none"> - Have a clear plan how they wanted to play - They have used players in their natural positions and found a fitting system around them paired with a certain amount of luck
How to objectively assess Skill in the shadow of luck?	<ul style="list-style-type: none"> - Clubs are definitely deceptive when it comes to scouting or transferring players, who are showing a strong World cup or European Cup performance, falling victim to certain decision biases - Using data analysis to eliminate influences caused by luck and take a large enough sample size - In the medium- to long-term all these players will regress towards the mean
Impact of Data Analysis on Luck and Skill in Football	<ul style="list-style-type: none"> - In football everything we can plan, we have to plan - Short term success is more difficult to plan for than medium- or long-term success - Good structure and clear vision allow smaller or less skilled teams to compensate for lack of skill or resources - Data analysis is just at the beginning and its importance will increase over the next years - The human components are still very difficult to assess and arguably the biggest limitation, very difficult to quantify
Influences Organisations have on Player's Skill	<ul style="list-style-type: none"> - Essential for the development of players - Highly skilled players often require an environment that makes them feel comfortable - A club philosophy and vision are indispensable for the club and players to be successful; this facilitates the processes encompassing building a successful team and player performances
Influences enabling Peak Performances	<ul style="list-style-type: none"> - When the environment is not a good fit for highly skilled player, these players are still able to perform at a decent level but will not be able to perform at their elite performance potential - Teams have to be constructed in a way that character traits and mentality work well together allowing a simpler transmission of these synergies on to the pitch and the sum of it enables peak performance - Ability to focus on what needs to be done in order to develop and become a better player
Skill Gap in Football	<ul style="list-style-type: none"> - Skill gap narrowed - Potential for performance greatly improved over last years - Elite teams will in the medium- and long term always be successful
Shift from Individualistic game to Team Game?	<ul style="list-style-type: none"> - Highly skilled players are still highly dependent from the collective of a team allowing them to be creative and win games for the team - Every club should still have one creative player that is less constrained within the system - Individualistic players will always a place in football, however they are currently having more difficult times concerning their role in teams
Why highly Skilled Players fail, less Skilled Players succeed?	<ul style="list-style-type: none"> - A competitive environment with better players surrounding highly skilled players, will most of the time result in a greater chance of fulfilling the player's potential - Less skilled players often show a greater willingness to learn and improve in training following hard work beats talent if talent does not work hard
Honourable Mentions	<ul style="list-style-type: none"> - With regard to player's abilities, we are close to reaching the maximum potential looking at decision-making, speed the game will be played, player's physical conditions - Teams in the future will be more individualistic in their way to play the game as the competitive advantage regarding technology and data will be negated

Table 22: Transcript of Expert Interview Number 8 (Own Development)

Expert Interview # 9	
Deciding factors who is winning with two relatively equal teams playing each other?	<ul style="list-style-type: none"> - Individual players who are able to influence the game - This mostly revolves around the abilities of decision-making and taking intelligence risks - Strength of character in coping with different situations
Role of Luck in Football	<ul style="list-style-type: none"> - The role luck plays is ambiguous - There are single events within a game that absolutely determine the outcome - Luck is controllable to a degree players cannot control a single event but on scale they can absolutely be luckier through the mental aspect - There is no conscious approach for people to be lucky, however, the ability to process the right information and see what allows them to end up with a positive outcome, that is elite decision making
Relationship between Luck and Skill	<ul style="list-style-type: none"> - The best players are able to sense opportunity in specifics of a game what we call luck in general - There is nothing like a player that is consistently lucky rather somebody who consistently makes good bets therefore they get a positive return on that, and it appears that they are lucky - They understand there is a probability if I take that risk there will be a better chance of a certain outcome
Leicester and Lille, can you be Lucky for a whole Season?	<ul style="list-style-type: none"> - Significance of sport science in Leicester's case was substantial to keep players fit - Clubs cannot influence what the oppositions do, they can only prepare their players as effectively as possible - That is exactly what these teams did, as their players were very competent in delivering the teams game plan - Both were able to deliver up there highest potential because, they feel like they have complete clarity on what they need to do, complete confidence to do it and they are physically and mentally ready to go out and do that every game
How to objectively assess Skill in the shadow of luck?	<ul style="list-style-type: none"> - Elite players are more consistent in the quality of their decision making - A player can have lots of raw characteristics that makes them potentially talented, but it is how they apply those to deliver impact that becomes critical
Influences Organisations have on Player's Skill	<ul style="list-style-type: none"> - If a player is not well emotionally regulated and does not have good people around them, there is a greater likelihood that the pressure of high performance will lead to challenges that are detrimental in their performance
Influences enabling Peak Performances	<ul style="list-style-type: none"> - Players develop skills when they are put in challenging situations which they respond to and then develop - Developing consistency is around self-awareness and understanding what it is that the player can do that delivers impact
Skill Gap in Football	<ul style="list-style-type: none"> - The influence of highly skilled player is declining but not because there are not players as good as them anymore, but because everybody else is getting better - The relative difference in performance is much smaller than it used to be because of the evolvement of football (coaches and players education, coaching methodology, physical development, global nutrition, data science, information available) and players athletic capacity of that
Shift from Individualistic game to Team Game?	<ul style="list-style-type: none"> - Because of the skill discrepancy in the most high-pressured game, they will be often decided by the most skilled players or lost by less skilled players - These elite players might be used in a narrower way, that narrowness of use means that they do not develop a wide of a skillset, but they have the potential to do that
Why highly Skilled Players fail, less Skilled Players succeed?	<ul style="list-style-type: none"> - In the modern game talent is nowhere near enough - It is extremely difficult when player do not know what they have to be ready for, turning up ready every day to be their best - That takes a level of maturity that is hard to reach and be emotionally stable enough and to impress at any given moment when they do not even know if anybody is watching
Honourable Mentions	<ul style="list-style-type: none"> - There is an increasing gap for the world's best teams, they have to pay exponentially more to get incrementals in performance - Elite clubs who buy player for \$50m and average teams buys a player for \$25m, yes, the player is a little bit better but not twice as much, which makes the \$50m player rarer and costlier

Table 23: Transcript of Expert Interview Number 9 (Own Development)

Expert Interview # 10	
Deciding factors who is winning with two relatively equal teams playing each other?	<ul style="list-style-type: none"> - Events out of the team's control will contribute to the outcome of a single match - Luck often plays a role which are partially controllable and who is making the better decisions surrounding them will win
Role of Luck in Football	<ul style="list-style-type: none"> - If a player scores some goals over several games this is not luck it is skill, does it mean it is repeatable and sustainable, no - Luck plays a greater role in addition to the nature of one off or two leg matches
Relationship between Luck and Skill	<ul style="list-style-type: none"> - If you pick out a pack of cards and ask me which card it is, I will get it wrong a lot but once in a while or after a long enough time I will get it right, meaning that another team than the favourite will win the championship - There will always be players that will end up not having the career their talent would have merited
Leicester and Lille, can you be Lucky for a whole Season?	<ul style="list-style-type: none"> - Leicester won league because they were the best team in England - They were lucky at how that group of players assembled because when more elite clubs would have wanted any of these players, they could have gotten them probably due to greater financial resources - If the success would have been due to skill mainly it would have been repeatable to some extent
How to objectively assess Skill in the shadow of luck?	<ul style="list-style-type: none"> - The better we understand current performance, the better we will understand future performance - This is very difficult due to the relatively small sample size with regard to matches they have played, matches comparable players have played
Impact of Data Analysis on Luck and Skill in Football	<ul style="list-style-type: none"> - Scouts and clubs can often only see a sub sample of what comes out and they are estimating based on that as best as they can to predict future potential - The narrative is set by the results and not by what happened
Influences Organisations have on Player's Skill	<ul style="list-style-type: none"> - Clubs have the ability to have a huge impact although within certain bounce, as it will never be the club that matters - If you take a fourth division player and put him into a program of one of the best teams, he still will never be able to be as good as one of their players, if you give an elite player a fourth division program, he will be less effective on the pitch
Influences enabling Peak Performances	<ul style="list-style-type: none"> - Integration into the team structure is important
Skill Gap in Football	<ul style="list-style-type: none"> - There will always by definition be exceptional players but there will always be a limited number of them - One characteristic of these players is that even the best teams are weaker without their elite players and make the best teams better - The skill level is definitely higher than 30 years ago as players benefit from better environments, technology and education - Players today on the bench at top 5 teams will probably still be in the first eleven of all the other teams below or potentially even star players - While 20-30 years ago they probably would not even be guaranteed to start at the mid table teams
Shift from Individualistic game to Team Game?	<ul style="list-style-type: none"> - More tactical rigour nowadays - As the quality of better preparation increases, it reduces the ability of elite players to affect the outcome of games on a regular basis
Honourable Mentions	<ul style="list-style-type: none"> - The league table at the end of the season is not dictated by refereeing decisions or luck, rather it is dictated by the quality of the teams and their performances - Relationship between player wages and player performance fairly strong

Table 24: *Transcript of Expert Interview Number 10 (Own Development)*