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Narrowing the gap in data analytics for women's football

A Swedish case study on the use of data analytics services

Master's thesis in Management and Economics of Innovation

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Abstract

Recently, women's football has seen unequal financial growth between teams, with some having superior resources, and an increased use of data analytics due to investment. The impact of the financial resources of teams on the use of data analytics remains uncertain, as it is possible that such resources have contributed to a widening of the competitive disparity between the teams. The study aimed to investigate how teams in the Swedish women's football league OBOS Damallsvenskan used data analytics services and what characteristics of data analytics services they prioritized, putting into perspective their budgets for data analytics. Data was collected through semi-structured interviews using qualitative research. Teams were grouped by budget into high, medium, and low categories. Each team's use of data analytics services has been evaluated, putting into perspective the characteristics of each classification. Lastly, the prioritized characteristics for data analytics services from each team in each classification group were identified and examined. The study came across several main findings. Firstly, it was discovered that 50% of the teams fall into the low-budget category which is a concerning number that portrays the current prosperity of the league. Secondly, high-budget teams gain a competitive advantage by collecting and analyzing real-time data to make informed decisions during the games. Thirdly, clubs with successful teams in both women's and men's football benefit from synergies as they can share costs across their teams. Furthermore, the size and skills of the data analytics teams are key as information asymmetry can lead to gaining a competitive advantage. Lastly, there is no unilateral solution for data analytics services and the provision of a baseline service is contingent upon each team's financial capabilities and preferences. The findings add to the existing research on data analytics in football by providing insights into how data analytics can be used to narrow the sportive gap in women's football.

Keywords: data analytics, women's football, Swedish football, competitive advantage, information asymmetry, synergies.

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List of Acronyms

Below is the list of acronyms that have been used throughout this thesis listed in alphabetical order:

EFD	Elitfotboll Dam
GPS	Global Positioning System
IFAB	International Football Association Board
FIFA	Federation Internationale de Football Association
RQ	Research Question
UEFA	Union of European Football Associations

1

Introduction

The background, aim, and research questions for this research study are presented in the following chapter.

1.1 Background

Firstly, this section introduces how data analytics is used to gain a competitive advantage in sports. Furthermore, it presents how women's football has experienced rapid growth during the last decade and how it has affected the teams.

1.1.1 Data analytics in sports

The success story of the baseball team Oakland Athletics who managed to become champions against all odds has gone down as one of the most remembered moments in sports history while also showcasing the potential for data analytics in sports (Memmert and Raabe, 2018). The story, often referred to as “Moneyball”, revolves around the team's introduction of systematic match analysis using statistical data, despite not being financially competitive (Hughes et al., 2012; Memmert and Raabe, 2018). While statistics had already been utilized in sports decision-making before, the models created by the Oakland Athletics set a new standard in the field (Memmert and Raabe, 2018).

The use of data analytics is nowadays found across almost all competitive sports (Fried and Mumcu, 2016; Memmert and Raabe, 2018). It has evolved into an essential tool for optimizing performance and strategy in women's football as teams explore every opportunity to gain a slight advantage against the opposition (Whyatt, 2021). Teams, players, and coaches can gain valuable insights into their performance, identify areas of improvement, and make informed decisions by gathering and analyzing data (Whyatt, 2021).

1.1.2 Data-tracking systems in football

Football teams can track data using different systems, each with its own advantages and disadvantages. This section focuses on systems based on video and GPS (Global Positioning System), which De Silva et al. (2018) describe as the main types of data-tracking systems used in football.

1.1.2.1 Video-based systems

Video systems collect data by combining several different camera perspectives that are typically installed in the stadiums (De Silva et al., 2018; Memmert and Raabe, 2018). Memmert and Raabe (2018) explain that the cameras identify each player and can easily track their actions and performance. Video systems operate without having to install any electronics on the player’s body, however, the system is not fully automatic as it requires intervention in cases where the cameras lose track of the player’s position or have any other issues identifying the players (Memmert and Raabe, 2018). For instance, goal celebrations, bad weather conditions, and illuminations are other factors that can affect whether the video system needs manual intervention to be readjusted (Memmert and Raabe, 2018).

1.1.2.2 GPS-based systems

GPS-based systems rely on satellite navigation and are used daily by lots of professional football teams (Chazan-Pantzalis and Tjortjis, 2020; De Silva et al., 2018; Memmert and Raabe, 2018). It is a common way to monitor player performance and the technology relies on each player wearing small tracking devices to gather data from the player’s every action, often placed in sports vests (Memmert and Raabe, 2018; De Silva et al., 2018). Memmert and Raabe (2018) explain that the data is automatically gathered and sent to another device, making the process very simple to handle for the teams. The device collects both fitness data as well as running data (De Silva et al., 2018; Fried and Mumcu, 2016; Memmert and Raabe, 2018). Additional measurements include a heart monitor and respiratory rate (Memmert and Raabe, 2018). By estimating the current fitness level, injuries caused by fatigue can be prevented (De Silva et al., 2018; Fried and Mumcu, 2016; Memmert and Raabe, 2018).

1.1.3 Area of application

Common areas of application for data analytics in football are player development, injury prevention, and scouting.

1.1.3.1 Player development

Data analytics is commonly used to improve players’ skills and performance during training sessions. Memmert and Raabe (2018) highlight the case of FC Midtjylland, which has heavily utilized data analytics since being acquired by a new owner in 2014. The club has integrated data analytics in various areas such as training, scouting, pre-game preparation, and post-game analysis, and looks to optimize every aspect of the daily work routine using mathematical models based on data (Memmert and Raabe, 2018).

Fried and Mumcu (2016) state that time is an easily adjustable variable in training. They suggest that the time allocated for training can be adjusted based on the players’ fitness or fatigue levels. However, De Silva et al. (2018) argue that balancing optimal physical performance and injury prevention can be challenging because

intense training to improve physical performance will increase the risk of fatigue and injury. Managing training loads is vital to make it possible for the players to perform at their highest level throughout the season (De Silva et al., 2018).

1.1.3.2 Injury prevention

The use of data analytics in football allows for the monitoring of physical load, which can help assess whether players or teams are adapting to the training sessions and reduce the risk of fatigue and injury (De Silva et al., 2018; Fried and Mumcu, 2016; Memmert and Raabe, 2018). Memmert and Raabe (2018) highlight the case where these arguments were used to convince the International Football Association Board (IFAB) to allow wearable technology during official matches to protect the players' health better. Fried and Mumcu (2016) add that it also provides important information to be used by teams in cases of player rotations or substitutions. Further, Fried and Mumcu (2016) explain that the current level of competition has allowed teams to monitor their players more closely than before, providing data on aspects such as wellness, physiotherapy, nutrition, recovery, and more, to mitigate the risk of injury. Memmert and Raabe (2018) provide specific examples of the data collected by teams, such as the distance covered by a player, the number of sprints, and the top speed reached. However, Memmert and Raabe (2018) explain that teams generally do not provide insights into exact procedures, since they hope to gain a competitive advantage through their approach.

1.1.3.3 Scouting

The process of evaluating potential players is complex due to the large number of leagues worldwide, and hence, many clubs employ scouts for this purpose (Stanojevic and Gyarmati, 2016; Pappalardo et al., 2019). However, the human-based scouting approach has several limitations, including high cost, limited scalability, and subjective biases (Stanojevic and Gyarmati, 2016; Pappalardo et al., 2019). To overcome these challenges, Pappalardo et al. (2019) promote using data analytics to select a group of the best players who meet specific constraints or show certain performance patterns. This approach enables clubs to analyze a larger group of players, saving time and resources while expanding scouting operations and opportunities for talented players (Pappalardo et al., 2019).

Data analytics is considered a recognized method for scouting new players (Memmert and Raabe, 2018; Pappalardo et al., 2019; Stanojevic and Gyarmati, 2016). Memmert and Raabe (2018) explain that it can help smaller teams compensate for financial disadvantages. To evaluate the performance of a player, various metrics such as pass completion rate are used (Memmert and Raabe, 2018). However, according to Memmert and Raabe (2018), metrics do not always provide the full picture. For instance, the pass completion rate does not consider whether a player makes safe passes over short distances or riskier passes to create goal chances (Memmert and Raabe, 2018).

1.1.4 Growth of women's football

Women's football has experienced significant growth in recent years, with increased investment, media coverage, and participation. UEFA (2019) describes how teams and leagues have tried to improve the standard of play, facilities, and player salaries. Major clubs such as Barcelona, Juventus, and Paris Saint-Germain have established women's teams. The UEFA Women's Champions League has seen an increase in the number of entries and viewership (UEFA, 2019). The FIFA Women's World Cup has also gained more attention, with the 2019 tournament reaching a record-breaking audience (FIFA, 2019). These developments have contributed to a growing recognition of women's football across the world.

OBOS Damallsvenskan, Sweden's highest division, is not an exception and has also experienced significant growth during the last decade. For instance, the total revenue from the teams in the league has increased by a staggering 63% from 91 MSEK in 2012 to 149 MSEK in 2021 (Hagman and Gustafsson, 2022). Swedish women's football is also following the trend of more men's football clubs investing in creating women's teams (Brattgård, 2023). Brattgård (2023) explain that the number of Swedish football clubs that have professional men's teams and a team in one of the three best women's divisions has increased by 50% in the last five years. Specifically, Brattgård (2023) mentions Malmö FF, Örgryte IS, and IFK Göteborg as examples of clubs with a professional men's team that recently has invested increasingly more in women's football. However, the growth in women's football has led to an increasing gap between the teams as some teams have far superior financial strength. The impact of the financial resources of teams on the use of data analytics remains uncertain, as it is possible that such resources have contributed to a widening of the competitive disparity between the teams. Moreover, some teams offer professional salaries to the players, allowing them to focus on their football careers, while other teams can not afford it (FIFPro, 2020). For instance, Hagman and Gustafsson (2022) present how 3 of 12 clubs in the 2021 edition of OBOS Damallsvenskan accounted for 95% of all clubs' equity. It is intriguing numbers that helped sparked the interest for this research study, which investigates how different economic conditions influence the perception and adoption of data analytics in women's football.

1.2 Aim

The aim of this research study is to investigate how women's football teams use data analytics services and what characteristics of data analytics services they prioritize, putting into perspective their budgets for data analytics. The research is conducted as a case study of Swedish women's football by focusing on the teams in OBOS Damallsvenskan.

1.3 Research questions

The study will address one main research question (RQ1), which will be complemented by three sub-questions (RQ2, RQ3, and RQ4):

RQ1: How do the teams' budgets for data analytics services influence their use and prioritized characteristics of data analytics services?

RQ2: What are the team budgets for data analytics services?

RQ3: How do the teams use data analytics services?

RQ4: What characteristics do the teams prioritize for data analytics services?

1.4 Disposition

In the following section, the content of this research study is presented, structured into several chapters.

In the first chapter of the research study, *Introduction*, the background, aim, research questions, and disposition are presented.

The next chapter, *Theoretical framework*, presents economic concepts that relate to the use of data analytics in professional football.

In the subsequent section, *Methods*, the research design and approaches used for data collection, data analysis, and research ethics are described.

Thereafter, the results derived from the interviews are presented in chapter 4, *Results*, which are further analyzed in the next chapter *Analysis and discussion*.

In *Conclusions*, the conclusions of the research study are stated. Furthermore, the authors' thoughts on future research on the subject are discussed.

Following the *Bibliography*, which lists all the references used in the study, the interview guide is presented in *Appendix A*.

2

Theoretical framework

This chapter presents prominent economic concepts in sports which can be observed in teams' adoption of data analytics services. These concepts will be further examined to support the analysis and discussion chapter later.

2.1 Economic concepts in sports

Competitive advantage, synergies, and information asymmetry are key economic concepts for understanding data analytics in modern football.

2.1.1 Competitive advantage

Porter's theory of competitive advantage is a conceptual framework that provides businesses with the means to formulate strategies to compete effectively within their respective industries. The overarching objective of this theory is to attain sustainable competitive advantage, which enables an entity or organization to achieve enduring success. The attainment of sustainable competitive advantage is realized through three key avenues: cost leadership, differentiation, and focus. The adoption of one of these strategies by a company or entity is pivotal in securing sustainable competitive advantage (Porter, 1985). Barney (1991) explains the dynamic in which companies need to have resources and capabilities that are valuable, rare, difficult to imitate, and non-substitutable to improve their relative performance to their competitors.

In the realm of sports, particularly football, teams strive to secure competitive advantages over their competitors within the league through various means, with the objective of achieving success, whether that be sportive or financial. Christensen (2001) highlights the importance of technology and its constant improvement as the existing advantage may be destructive if the adaptation to the circumstances is absent. Thus, entities need to utilize technologies, which can take various forms, such as scouting and recruitment practices using data analytics services, to hold an advantage, with the aim of improving the team's chances of attaining superior results. Furthermore, this is aligned with Barney's (1991) resource-based theory which highlights that organizations can achieve sustained competitive advantage by leveraging valuable, rare, difficult-to-imitate, and non-substitutable resources and capabilities. In the context of football, the use of data analytics to gain advantages over competitors aligns with this theory. By utilizing data analytics services that competitors do not have access to, a team may gain smaller yet significant advantages

in this area.

2.1.2 Synergies

Synergy is a key concept in economics that refers to the benefits that arise from the collaboration of two or more entities, resulting in an increase in combined value beyond their individual values. These benefits are often derived from resource sharing and cost reduction, which would be more costly to achieve independently. Furthermore, Sirower (1997) describes synergies as an increase in competitiveness beyond what these entities would accomplish independently. Synergies can manifest in different forms, including revenue, cost, cost of capital, and higher margins, as categorized by Sevenius (2003).

In the context of data analytics services in women's football, this study focuses specifically on cost synergies, given its relevance to the cost-side aspect of the service and what teams must pay for services. Cost synergies arise when collaborating entities can reduce their costs, primarily through economies of scale (Sevenius, 2003). In the case of football clubs that have both men's and women's teams, they may already have an edge or competitive advantage due to existing cost synergies within the club. Such clubs can benefit from reduced administrative and overhead costs, including the cost of data analytics services, as they can be spread across both teams.

2.1.3 Information asymmetry

Information asymmetry is a well-established concept in economics that describes a situation where one party in a transaction has more or better information than the other party (Bergh et al., 2018). This creates an uneven playing field that can lead to unfair outcomes and a power imbalance between the parties involved (Stiglitz, 2002). Additionally, Nayyar (1990) mentions how service firms could use asymmetries to gain a competitive advantage.

Despite that Stiglitz (2002), Bergh et al. (2018), and Nayyar (1990) mention information asymmetry in another context, the same concept may be applied to football and the use of data analytics services. In this context, information asymmetry can arise when some teams or leagues have access to more and better data than others. This may be a result of the unequal distribution of resources between teams and partnerships with data analytics companies that can give some teams an advantage over others. Aligned with what Nayyar (1990) mentions concerning buyers who may experience difficulties in determining specific attributes of a service before purchase, which is a task that can be costly, this may create even bigger challenges for smaller or less well-funded teams, making it difficult for them to compete with larger and better-funded teams. To address this issue, it is important to promote transparency and equal access to data, data analytics, and video analysis tools to some extent.

3

Methods

This chapter provides an explanation of the methods used in the research including the rationale behind the chosen approach, how the data was collected and analyzed, as well as the adherence to research ethics.

3.1 Research design

The research was carried out in the form of a case study on OBOS Damallsvenskan with the intention of generalizing specific observations to other women's football leagues with similar characteristics. The authors chose a case study on a domestic league since it provided easier access to higher-level respondents within football clubs, as they could leverage the strong university brand and their personal network to contact potential participants in the study.

The study was conducted through a qualitative research approach with elements of inductive reasoning, as it is flexible in terms of the research questions since it allows for changes to be made during the research process to better understand the phenomenon being studied. Bell et al. (2019) describe qualitative research as an approach that typically prioritizes verbal and written information rather than numerical data in the process of gathering and interpreting research data. Bell et al. (2019) also explain that a qualitative research approach is compatible with an inductive view where the collection of relevant data is performed before any theoretical work. Similarly, the authors in this research study developed the theoretical framework based on topics that emerged from the data collected in the semi-structured interviews. Further, Bhandari (2022) defines inductive reasoning as a form of logical reasoning that involves moving from specific observations to general conclusions, often by projecting from a limited sample size. Similarly, the authors in this research study hope to generalize specific observations from OBOS Damallsvenskan to other women's football leagues with similar characteristics.

The methods of the research study has been divided into 3 different phases to answer the research questions. The first phase involved a pre-study that included exploring the topic, defining the scope of the report, and establishing the context and methods to be used. The second phase involved conducting semi-structured interviews to gather data that would directly address research questions 2-4. In the third phase, a theoretical framework was developed based on topics that emerged from the semi-structured interviews and were incorporated into the analysis and discussion chapter

to help answer research question 1.

3.2 Data collection

This section provides an overview of the semi-structured interviews and respondents.

3.2.1 Semi-structured interviews

The data collection was conducted through semi-structured interviews. It enabled the authors to ask open-ended questions while also guiding the interviewees, leaving room for them to expand on their answers within the chosen direction (Bell et al., 2019). Additionally, semi-structured interviews enabled the authors to maintain flexibility regarding the information required, allowing concepts and theories to arise from the data collected. As a result, the research study was able to dig deeper into specific topics that appeared during the semi-structured interviews.

An interview guide, *Appendix A*, was created with a focus on the avoidance of leading questions and suitable language, as discussed by Bell et al. (2019). The data collection involved 15 interviews and lasted between 30 to 45 minutes each. 12 interviews were conducted via online video calls while three interviews were conducted through phone calls. All interviews had one respondent, except for the interview with representatives of EFD (Elitfotboll Dam), who had two respondents as they believed their combined knowledge could potentially provide more valuable insights.

3.2.2 Respondents

Since the research was carried out in the form of a case study on OBOS Damallsvenskan, representatives of all teams were interviewed. Additionally, representatives from EFD, a Swedish interest organization that represents the professional football clubs in the highest two divisions of the Swedish league system for women's football, were also interviewed.

The selection of respondents included one representative from each team, as the authors were limited on time and experienced severe struggles to receive responses from any additional potential respondents. The respondents came from a range of different roles within their organizations, mainly sporting directors, head coaches, and assistant coaches. Therefore, other potential respondents as players or medical staff were not interviewed as they were not considered to have the same level of impact on the decision-making related to the choice and use of data analytics services.

The respondents are listed in the table below. However, individual comments from each respondent are to be kept anonymous and therefore each respondent has been assigned a random number whenever they are referred to. Except for the respondents from EFD, Stefan Alvé and Robin Blommé, whose individual comments will be explicitly attributed to them.

Table 3.1: Name, role, and organization of respondents.

Name	Role	Organization
Robert Vilahamn	Head coach	BK Häcken
Staffan Jacobsson	Sporting director	BP
August Fors	Assistant coach	Djurgården
Stefan Alvé	Sporting director	Elitfotboll Dam
Robin Blommé	Football developer	
Ieva Cederström	Assistant coach	FC Rosengård
Rafael Roldán	Assistant coach	Hammarby
Tommy Nyberg	Sporting director	IFK Kalmar
Tor-Arne Fredheim	Manager	IFK Norrköping
Rikard Östergren	Assistant coach	IK Uppsala
Jonas Nilsson	Sporting director	KIF Örebro
Daniel Angergård	Assistant coach	Kristianstads DFF
André Jégler	Head coach	Linköping FC
Stellan Carlsson	Head coach	Piteå IF
Ulf Kristiansson	Head coach	Vittsjö GIK
Dennis Popperyd	Sporting director	Växjö DFF

3.3 Data analysis

During all phases of the research study, qualitative data analysis was conducted. The data collected from the semi-structured interviews were organized into themes and analyzed thematically to help the authors identify patterns that may not be immediately apparent, as supported by the reasonings of Bell et al. (2019). The themes were composed of recurring topics discussed in the interviews and were highly relevant to the research questions. The data collected from the semi-structured interviews were categorized into three different topics: budget for data analytics services, use of data analytics services, and characteristics of data analytics services. Moreover, the respondents were grouped into three categories based on their budget allocation: high-budget teams, medium-budget teams, and low-budget teams.

3.4 Research ethics

The research study has been conducted with business ethics in mind. Bell et al. (2019) divide ethics in business research into four main principles: whether there is harm to participants, whether there is a lack of informed consent, whether there is an invasion of privacy, and whether deception is involved. Firstly, the authors followed the no-harm principle by using sensitive and appropriate language when asking questions to avoid causing distress or offense for the respondents. Secondly, the authors ensured informed consent by explaining to the respondents that their participation is voluntary and that they can withdraw at any time without any repercussions. Thirdly, the authors showed respect for privacy and confidentiality by explaining to the respondents how their data will be collected, stored, and used as well as obtaining their consent for publication. Lastly, the authors followed the truthfulness principle by providing transparent information about the study's purpose, methods, and findings.

The topic for the research study was suggested by a Swedish data analytics company named PlaymakerAI. The company supported the authors in pursuing the research topic through an introductory presentation about data analytics in the football sphere.

4

Results

The results of the interviews are presented in three sections. The first section discusses the budgets that teams have for data analytics services. The second section covers the ways in which teams use data analytics services, and the final section covers the characteristics that teams consider when choosing data analytics services.

4.1 Budget for data analytics services

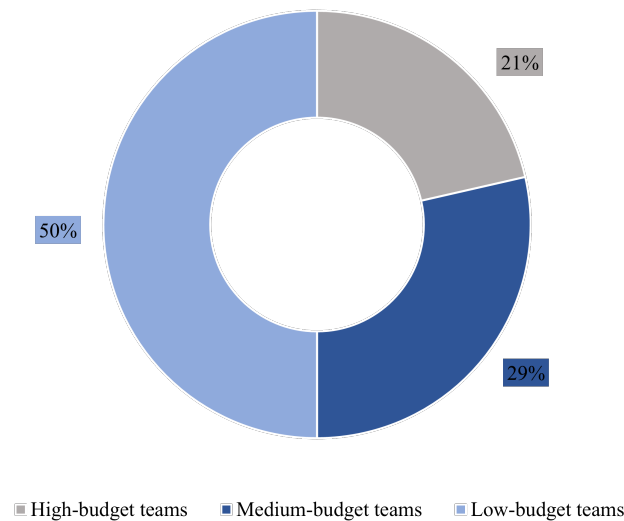
The teams in OBOS Damallsvenskan have been classified into three distinct groups based on their budget for data analytics services. The three groups are high-budget teams, medium-budget teams, and low-budget teams. Due to the confidentiality requested by several teams, the specific budget criteria that were used in the study for the classifications will not be publicly disclosed, however, the constraints and criteria that were taken into consideration will be briefly explained. The budget allocated for data analytics was chosen as the primary criterion due to its quantifiability and suitability in representing the economic perspective of the teams. Furthermore, secondary criteria which were taken into consideration include the number of services employed, the type of services, the team size for analyzing the data, and the financial capabilities of competitors who shared similar traits in terms of utilization of data analytics. To generate the final outcome of the classification groups and their respective distribution of teams, a formula was established with a certain weight given to each criterion.

Table 4.1: Respondents and their team’s budget for data analytics services.

Respondent number	Budget
5	High
10	High
12	High
2	Medium
4	Medium
11	Medium
15	Medium
1	Low
3	Low
6	Low
7	Low
8	Low
14	Low
16	Low

Half of the 14 teams were classified as low-budget teams, four teams were classified as medium-budget teams, and three were classified as high-budget teams. These classifications were essential for the study to identify trends within and between the different groups. They were utilized in the subsequent sections of the study to further shine a light on the specific characteristics of each classification.

Figure 4.1: Share of teams in OBOS Damallsvenskan that correspond to each budget classification.

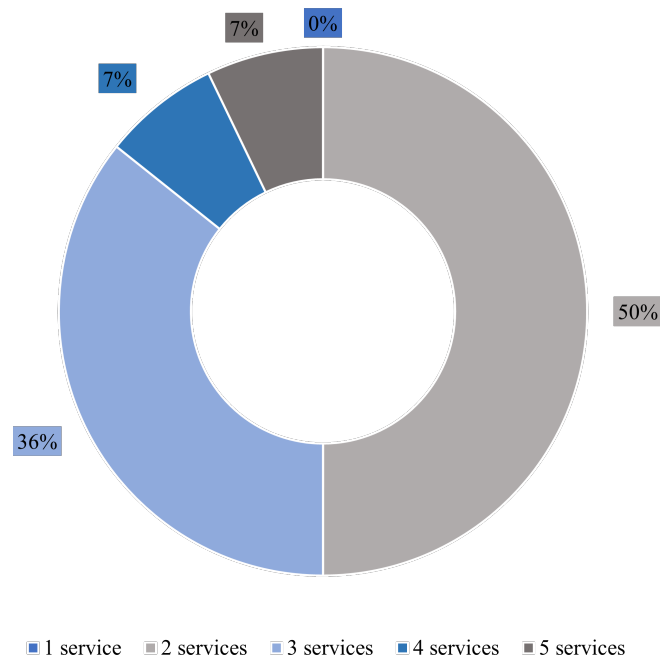


4.2 Use of data analytics services

The interviews revealed that the teams adopt different approaches when it comes to the use of data analytics. High-budget teams tend to utilize data analytics more frequently, often daily. In contrast, low-budget teams prioritize other investments, such as food or accommodation, over data analytics. As a result, these teams often only use data analytics weekly, mainly for scouting upcoming opponents or potential transfer targets.

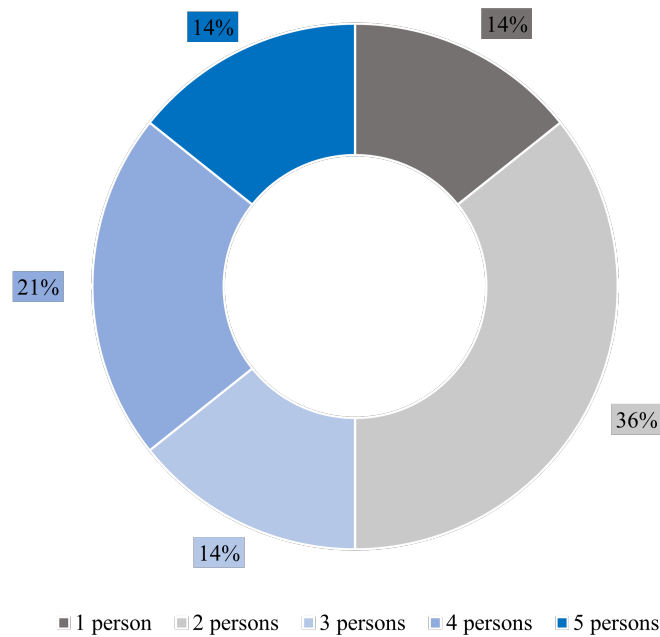
Most teams employ two or three different data analytics services. It is noteworthy that none of the teams use a single service, indicating that a minimum of two services is the standard for a team to remain competitive in professional football organizations on this level. The utilization of four or more services is less common among teams.

Figure 4.2: Share of teams in OBOS Damallsvenskan that use a certain number of data analytics services.



Based on the findings, the team size dedicated to data analytics was found to vary among the teams in the league. Specifically, 14% of the teams have a single person dedicated to data analytics, while 36% have two, and 14% have three individuals assigned to this function. On the other hand, 21% of the teams have four people working with data analytics, while the remaining 14% have five individuals dedicated to the task. These findings suggest that teams tend to have relatively small teams dedicated to data analytics, with most teams having two or three members in their teams.

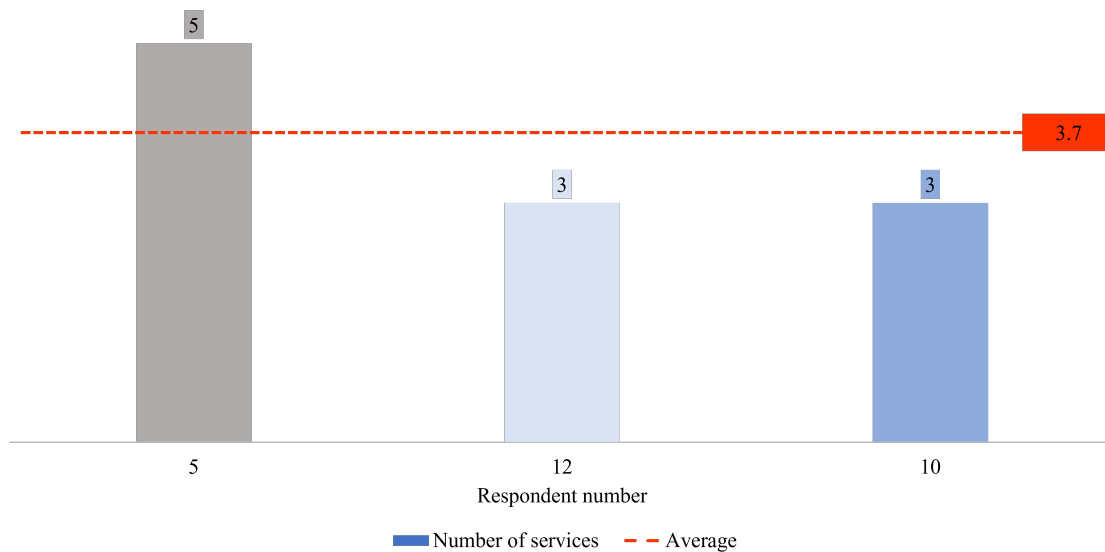
Figure 4.3: Share of teams in OBOS Damallsvenskan that use a certain team size for analyzing data.



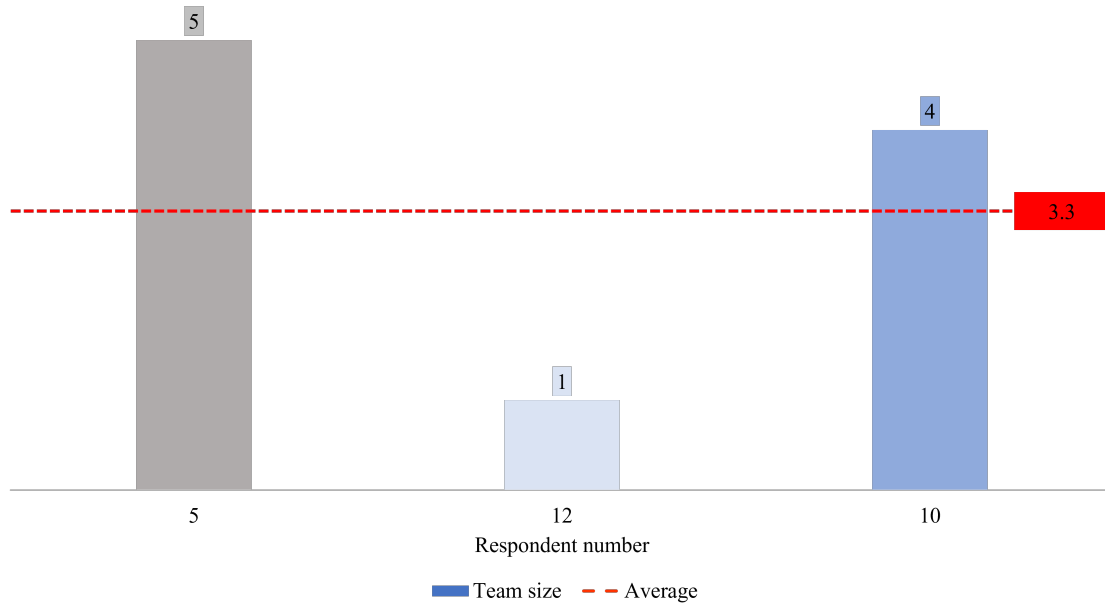
4.2.1 High-budget teams

The interviews conducted revealed that high-budget teams utilized a diverse range of services. Respondents 5, 10, and 12 reported using video platforms to review their training sessions and games, as well as statistics platforms to analyze upcoming opponents and individual players. The respondents found statistics platforms to be convenient for obtaining a quick overview of the strengths and weaknesses of their opponents by reviewing different clips and key performance indicators. Respondent 12 also utilized raw data to create diagrams and graphics. Respondent 5 explained that they extracted clips of various sequences in games that they wanted to highlight, such as how they wanted to build their play, offensive key passes, and others. To monitor the physical status of the players, respondent 5 utilized GPS trackers to obtain insights into players' speed, distance traveled, and other relevant data. Respondent 10 had a slightly different approach and employed heart rate monitors to collect information about the players' physical status, which is primarily used by the medical team. In total, respondent 5 utilized five services whilst respondents 10 and 12 utilized three each. This results in the average number of services for the high-budget teams being 3.7 services per team.

Figure 4.4: Number of data analytics services used by high-budget teams.



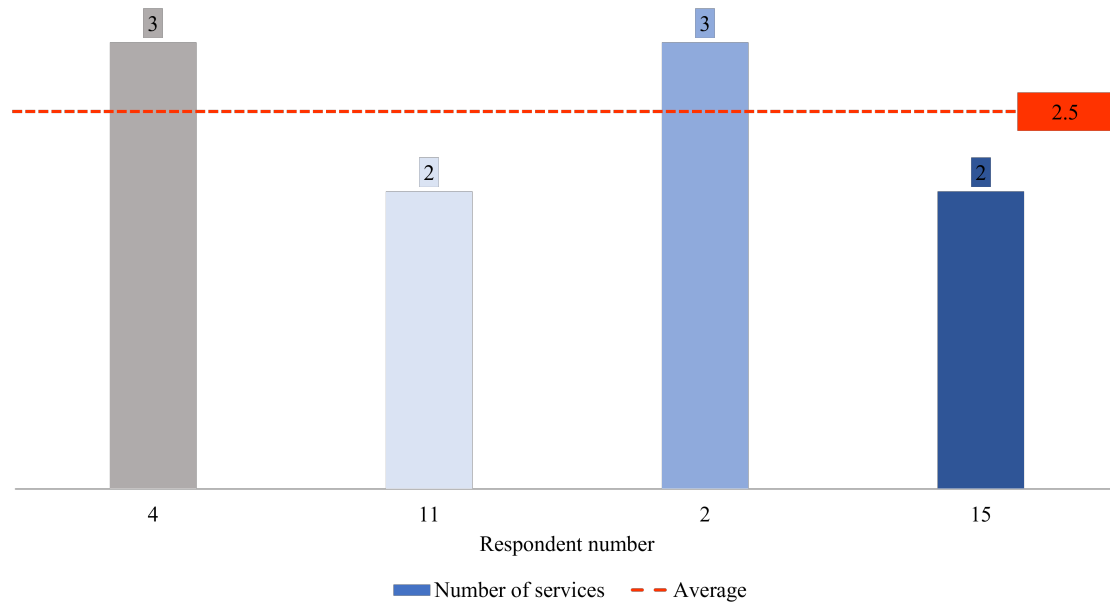
The interviews further revealed that high-budget teams have more personnel available to assist in analyzing data. Respondent 5 explained that the workload is shared among five individuals: a part-time worker who focuses exclusively on recent and upcoming games, a head coach who focuses on tactics, an assistant coach who focuses on individual players, a goalkeeper coach who focuses on goalkeepers, and a physical coach who primarily handles GPS data. Respondent 10 had a similar experience in which the workload was shared among the head coach, assistant coach, and goalkeeper coach. Moreover, respondent 10 reported having a medical team that dealt with data from heart rate monitors. Respondent 10 opined that the advantages of data analytics rely on the number of personnel rather than the type of services utilized. This finding is consistent with the views of respondents 5 and 12, who believe that there will be full-time positions for data analysts in women's football in the near future. Respondent 12 explained that the workload was primarily on the assistant coach, who was also supported by an external company. Respondent 12 further stated that working with raw data necessitates knowledge of both programming and mathematics. Considering the above data points, the average team size per team for high-budget teams is 3.3 persons per team.

Figure 4.5: Team size for analyzing data used by high-budget teams.

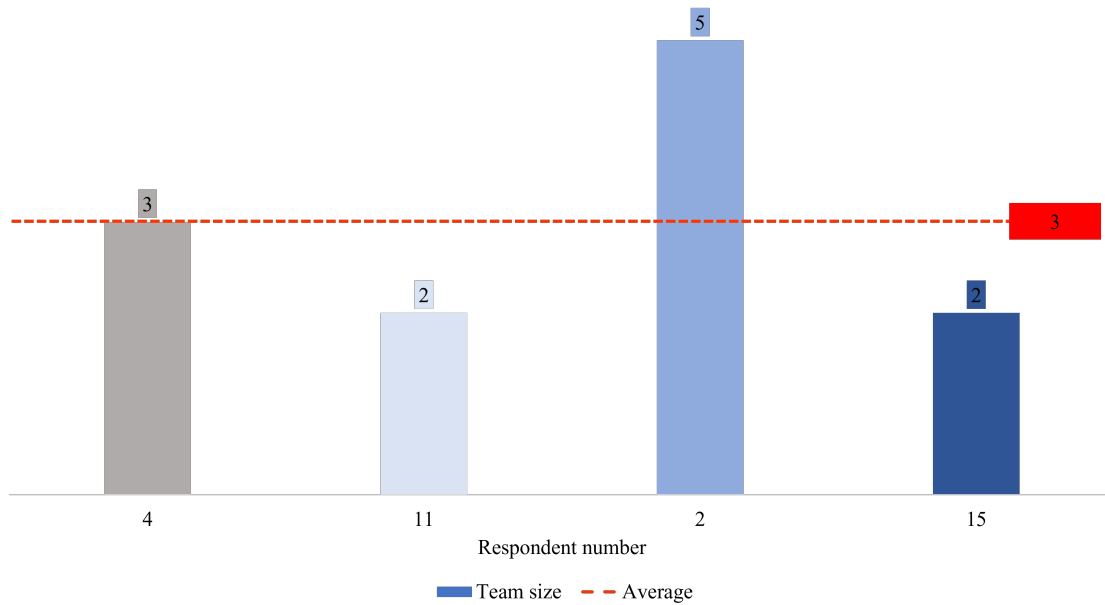
4.2.2 Medium-budget teams

A commonality among respondents 2, 4, 11, and 15 was their use of video platforms to review training sessions and games, as well as statistics platforms. Respondent 4 explicated that they code their numerical data live during games, enabling different key performance indicators to be available for the team at half-time. According to respondent 4, this is a necessity as reports from statistics platforms are typically delayed and may take several days to become available. The team uses standardized key performance indicators to measure their progress over extended periods. Respondent 4 mentions that “it is one thing having the data, and another thing to know how to use the data. In the end, if you do not do anything with the information, it will become useless”. Respondent 4 also believes that data analytics is not the difference maker between high-ranked teams and low-ranked teams, but that “it definitely plays a bigger part in the difference amongst the top-ranked teams. It is the little details that make the difference”. Respondent 11 emphasizes the importance of selecting only two to three clips during each session to discuss with the players and underscores the need to exercise caution not to overwhelm the players with too much information. The respondent believes that most of the time is spent analyzing a game that has been played to assess the team’s strengths and weaknesses and to identify areas for improvement in the future. Respondent 2 notes that despite their medium-budget approach, they can still afford a few GPS trackers that the physical coach uses to evaluate the players’ physical conditions. In total, respondents 2 and 4 utilize three data analytics services each, whilst respondents 11 and 15 utilize two each, resulting in an average of 2.5 services per team for the medium-budget teams.

Figure 4.6: Number of data analytics services used by medium-budget teams.



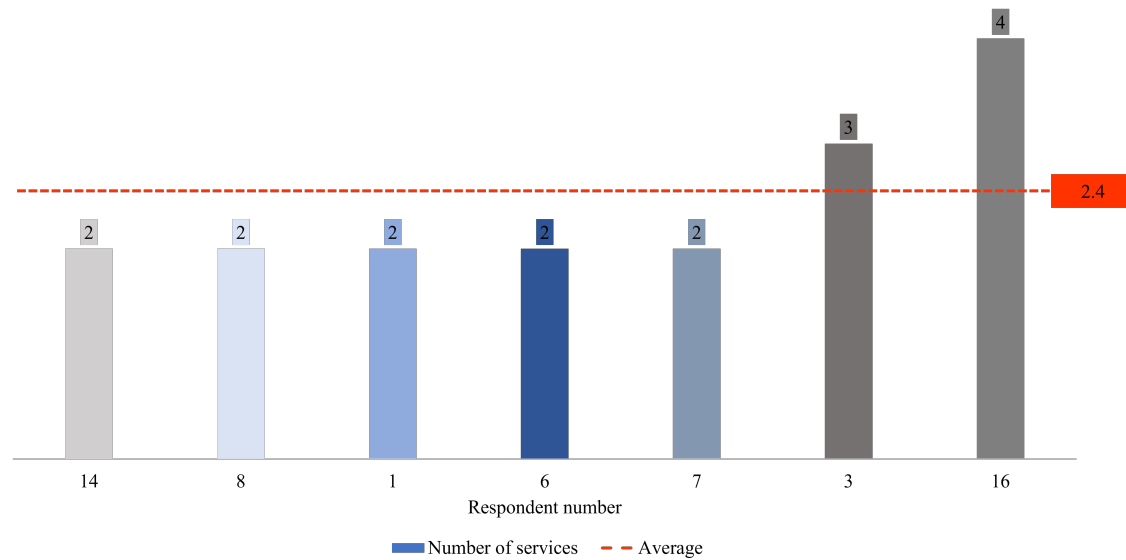
According to the interviews, it was found that medium-budget teams have less personnel available compared to high-budget teams to assist with the analysis of data. Respondent 4 explained that in their organization there is “no 100% job for that”. The workload is instead shared across three persons: two assistant coaches and a sports coach. Respondents 2, 11, and 15 shared similar experiences as they also shared the workload across the coaching staff. Respondent 11 assigned game analysis to the head coach while the assistant coach focused on individual player analysis. Respondent 2 had a larger coaching staff, consisting of a head coach, two assistant coaches, a goalkeeper coach, and a physical coach who was responsible for handling GPS data. Respondent 15 reported that the head coach and assistant coach shared data analytics responsibilities. Additionally, respondent 15 expressed the belief that hiring more personnel would lead to improved insights from data analytics, providing a significant advantage as larger teams “can get a huge advantage in the future”. Overall, the average team size per team amongst the medium-budget teams is therefore 3 people per team.

Figure 4.7: Team size for analyzing data used by medium-budget teams.

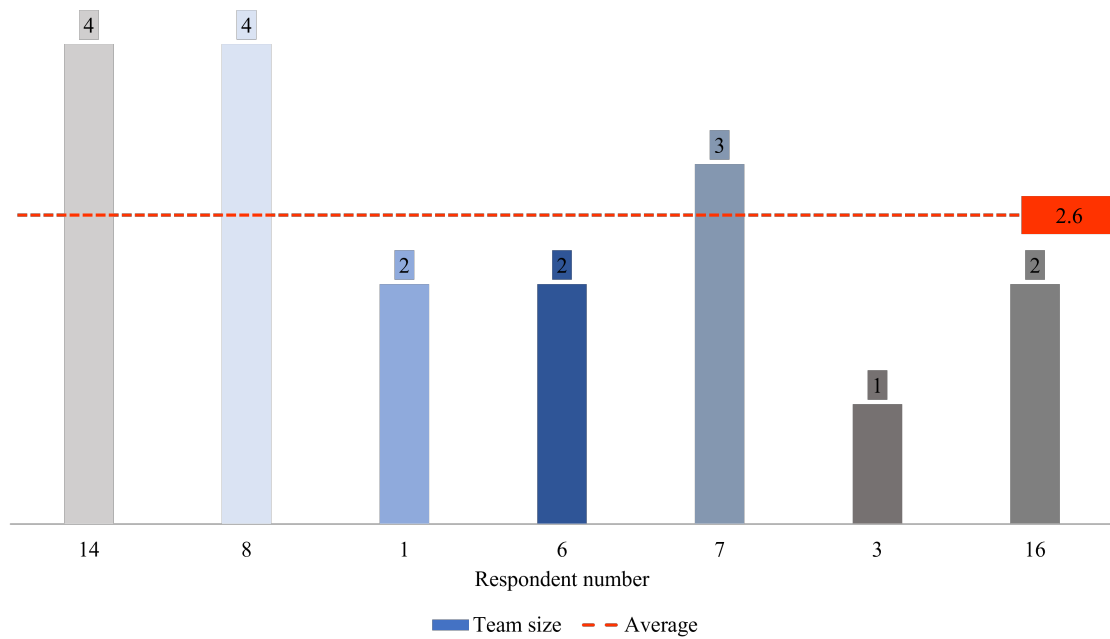
4.2.3 Low-budget teams

The findings of the interviews indicate that low-budget teams primarily rely on only two types of data analytics services: video platforms and statistics platforms. These teams have limited financial resources and can only afford essential services and equipment. Respondent 3 reports that they utilize a supplementary service that provides raw data, which they must manipulate to extract the necessary insights. However, they use this service only because it is currently free, and they find it to be more time-consuming compared to other services, therefore, it is not extensively utilized. Respondent 6 reveals that their organization has considered investing in GPS trackers, but the investment is deemed economically infeasible. Altogether, respondents 1, 6, 7, 8, and 14 utilize two services each whilst respondent 3 utilizes three services, and respondent 16 utilizes four services. This results in an average of 2.4 services per team amongst the low-budget teams.

Figure 4.8: Number of data analytics services used by low-budget teams.



The low-budget teams tend to have smaller coaching staff, resulting in fewer personnel working with data analytics. According to respondents 1, 6, 7, 8, 14, and 16, the teams typically use between 2-4 employees to analyze data, often consisting of the head coach, assistant coaches, and the sports director. Respondent 7 explains that larger clubs may have an entire team dedicated to data analytics, but it is not feasible for their team due to budget constraints. Further, respondent 7 expressed that “it is all about making it work on a smaller scale”. Respondent 16 expressed their desire to have a full-time analyst but recognized that it is not currently feasible for their team anytime soon. Respondents 1, 3, 7, 8, and 14 mentioned that the current use of data analytics in the league is less about which service is being used, as the services are generally similar, but more about the availability of personnel to effectively analyze the data. Respondent 7 states that “the richer teams have an advantage through having more personnel available to work with data analytics. But we must still try to do the same with our limited resources. Data analytics is a great reason why football is progressing forward”. The average team size per team amongst the low-budget teams is 2.6 persons per team.

Figure 4.9: Team size for analyzing data used by low-budget teams.

4.3 Characteristics of data analytics services

From the respondents, it was found that teams prioritize various characteristics while selecting data analytics services. High-budget teams generally prioritize characteristics related to product quality, whereas low-budget teams tend to have a larger focus on price.

Based on the interviews, tables were created for each category of teams to list the factors that are considered when choosing data analytics services. These factors are terms that were created by the authors when analyzing the result and should not be confused with the exact terms used by the interviewees.

Moreover, the tables refer to the number of respondents that mentioned each factor as frequency. Further, the tables include a weight that describes how prioritized a factor was considered by the respondents. The lists in the tables are firstly sorted based on the frequency value, then secondly on the weight value.

An example is provided to explain how the weight was calculated: Respondent X thinks that price is the most important factor, assigning it a value of 1. Respondent Y thinks that price is the third-most-important factor, assigning it a value of 3. The weight, calculated as the normal average, would then be $(1+3) / 2 = 2$.

Table 4.2: Prioritized characteristics for data analytics services by all teams.

Factors	Frequency	Weight
Price	9	1.4
Database size	8	2.0
User-friendliness	6	2.0
Speed	3	2.3
Creation of goal chances	1	1
Time-saving	1	2
Comparison to other teams	1	2
Reaching the final third	1	2
Integration of services	1	3
Lost ball possession	1	3

4.3.1 High-budget teams

The interviews found that high-budget teams consider user-friendliness and database size as the most important factors when choosing data analytics services. Speed was also mentioned by most respondents, but it was not considered essential in the decision-making process.

Table 4.3: Prioritized characteristics for data analytics services by high-budget teams.

Factors	Frequency	Weight
User-friendliness	2	1
Database size	2	1.5
Speed	2	2.5
Time-saving	1	2
Price	1	3

Respondent 5 prioritizes user-friendliness and time-saving as the most important factors for data analytics services. Time-saving, in this case, refers to how much time the service can save for the data analytics team as they must dig through a large set of data. Sharing the same account across users to reduce costs is also mentioned. Respondent 10 agrees that user-friendliness is crucial and believes that database size is the second-most important factor, for instance, what leagues the service covers and how far back in time statistics are available. Respondent 10 mentioned that this is a common problem for these types of services regarding women's football. Respondent 10 also mentions that the service should provide quick access

to statistics after a game. Respondent 12, on the other hand, believes database size to be the most important factor, as it could lead to economic benefits when negotiating deals across several teams in an organization. Price is still considered important, but the speed for the statistics to become available after a game is the second-most important factor.

In terms of improvements for the data analytics services, respondent 5 thinks that the communication within the services could be improved, particularly in terms of sending statistics and messages to players more effectively. Respondent 12 highlights the need for speed, as it currently takes too long for the data to become available.

4.3.2 Medium-budget teams

The result showed that medium-budget teams prioritize user-friendliness and database size as the most significant factors in selecting data analytics services, similar to the high-budget teams. However, medium-budget teams also showed to mention several quite specific factors such as how goal chances are created or where the ball possession is lost.

Table 4.4: Prioritized characteristics for data analytics services by medium-budget teams.

Factors	Frequency	Weight
User-friendliness	2	2.5
Database size	2	3.5
Price	1	1
Creation of goal chances	1	1
Comparison to other teams	1	2
Reaching the final third	1	2
Integration of services	1	3
Lost ball possession	1	3

Respondent 4 emphasizes the importance of price as a primary determinant in the selection of a data analytics service. Following price, user-friendliness, and integration with other services were identified as critical factors. Respondent 11, on the other hand, emphasizes the importance of the database size as a crucial determinant in the selection of a data analytics service, however, they also agree that user-friendliness is important. Contrarily, they do not consider the price as important. Respondent 15 went a bit deeper into specifics and prioritized the ability of the service to analyze their creation of goal chances, followed by the team's performance in reaching the final third of the field. Additionally, respondent 15 highlights the significance of the location where the ball is lost on the field, as well as how their opponents create goal chances. While price is not currently a decisive factor, it could become more

relevant in the future.

Considering improvements for the data analytics services, respondent 4 highlights the need for data analytics services to allow for more precise data analysis by enabling the user to split the pitch into smaller sections. The respondent further suggests that it would be helpful to have a feature that indicates where the team won or lost the ball. Moreover, respondent 4 explains how “in general, it feels like data in women’s football is missing”. Respondent 11 emphasizes the importance of user-friendliness in the interface for analyzing statistics on specific players. The respondent further notes that the current process for data analysis is time-consuming and would appreciate any solutions that could enhance productivity. Respondent 2 suggests that data analytics services could benefit from improved drawing tools. Additionally, the respondent thinks that certain statistics, such as those concerning corners, set plays, and throw-ins, are missing. Conversely, respondent 15 expresses satisfaction with the quality of data provided by data analytics services. However, the respondent notes that the analysis process can be challenging due to a lack of personnel and time.

4.3.3 Low-budget teams

The result showed that low-budget teams prioritize price as the most significant factor in selecting data analytics services. Nevertheless, database size also showed to play a crucial role in their decision-making process.

Table 4.5: Prioritized characteristics for data analytics services by low-budget teams.

Factors	Frequency	Weight
Price	7	1.3
Database size	4	1.5
User-friendliness	2	2.5
Speed	1	2

All respondents from low-budget teams have reportedly mentioned price as one of the most significant factors, with five out of seven respondents identifying it as the most crucial factor. Respondent 3 has explicitly stated that price is the most important factor, as they would not have access to many of these services if they were not free. Respondent 3 has also stated that many women’s football clubs must choose a single data analytics service since they cannot afford multiple ones. In contrast, respondents 14 and 1 stated that database size is the most crucial factor. Respondent 1 explains that while “price is a huge factor”, they instead choose to prioritize database coverage of the OBOS Damallsvenskan and Elitettan (the Swedish second-highest division). Respondent 6 considers database size to be the second-most-important factor and emphasizes a recent case where they had to reject a data analytics service provider due to the unavailability of statistics from the American

college leagues. Furthermore, respondent 6 explains that it is crucial for the service to cover the leagues they are focused on for recruiting new players, including leagues in neighboring countries in the Nordics, the American college leagues, and under-19 youth games from the national teams in the Nordics.

Several respondents offered suggestions for potential improvements to data analytics services. Respondents 1 and 16 emphasized the importance of database size and suggested that services should provide more comprehensive data, including statistics from pre-season games and tournament games. Respondent 3 suggested improvements in the integration between data and video services, and the ability to search and select their own categories, clips, and key performance indicators. Respondent 6 suggested the inclusion of more specific data, such as where the first touch by a player occurred after a corner or goal kick.

5

Analysis and discussion

This chapter analyzes and discusses the result of the research study by structuring it into seven different main findings.

5.1 Half of the teams operate with a low-budget approach

The answers from the respondents showed that 50% of the teams fall into the low-budget category for data analytics services, which is concerning as it suggests that some teams may not have access to the same level of resources and support as others. Thus, most of the answers concerning the teams' use and prioritized characteristics of data analytics services are tilted toward this side of the spectrum. Interestingly, however, this may indicate a big runway for future growth within the league, as teams will grow in conjunction with the growing infrastructure and industry around it, striving to utilize better resources to compete on a higher level. Furthermore, this could potentially have positive implications for the league's overall performance as teams could potentially secure and increase the number of qualification spots available for European tournaments.

Therefore, it must not necessarily be viewed negatively that 50% of the teams currently operate in the low-budget category. Instead, it can be viewed as a reflection of reality, and how far women's football has progressed in Sweden. Simultaneously, it represents the huge potential for further growth as the teams with fewer resources could grow and become competitive in the future.

Furthermore, the answers from the respondents showed that the difference between the low-budget and medium-budget teams was not as big of a gap as the difference between the medium-budget and high-budget teams. This may indicate that with increased effort and financial or sportive success in the league, most of the low-budget teams may get close to tightening the gap to the medium-budget teams, making the league more competitive within the near future. In other words, the uneven budget distribution among teams may be viewed as an extraordinary starting point with the potential for future growth and success.

5.2 Successful teams in both women's and men's football create synergies

The answers from the respondents showed that some teams have established a competitive advantage due to synergies that emerged because of the clubs having successful teams in both women's and men's football. Therefore, it is tremendously easier for these teams to spread costs for data analytics services between several teams. The situation is in line with what Porter (1985) describes as a sustainable competitive advantage, as a successful men's football team playing for the same club is not a given for all teams in OBOS Damallsvenskan.

Moreover, it can be seen through the lens of Barney (1991) who describes resources and capabilities as something rare and non-substitutable, like how having a successful men's team generally entails that the club already has a history of previous success, an established fan base, and financial success that has been built upon over the course of time. Through the exploitation of synergies, teams can gain a slight edge in utilizing multiple data analytics services leading to a competitive advantage. While the interdependence between financial resources and strategic decision-making in sports can yield valuable insights and advantages for teams, such investments can also come at a considerable cost which may only be feasible for teams with greater financial resources.

5.3 Lower-budget teams generally perceive data analytics as a cost

The answers from both team representatives and EFD showed that data analytics services are considered a necessity for running a professional football team. This is particularly relevant for lower-budget teams that struggle to allocate financial resources, human capital, and time to these services, limiting their ability to generate value from them. As a result, lower-budget teams tend to view data analytics services as a must-have, where they cannot fully utilize them but are forced to pay for them to remain competitive. This creates a challenge for lower-budget teams, as the cost could have been allocated to other areas of need that are more pressing.

On the other hand, higher-budget teams tend to view data analytics efforts as an investment and try to leverage multiple services to gain a competitive advantage. This allows them to extract the maximum value from data analytics services and allocate their financial resources more effectively.

The dichotomy in the perception of data analytics services suggests that while the use of these services is important for success, it also creates inequality among the competition. The cost of these services can create a significant burden for lower-budget teams, as they are forced to allocate resources to remain competitive in the market. The situation could result in significant disadvantages for the lower-budget

teams as it could further widen the gap to the high-budget teams.

The challenges faced by lower-budget teams in accessing data analytics services in professional football leagues have implications for competitive balance and the long-term success of the league. It is crucial to address the potential advantages that high-budget teams may gain through access to these services, as they may create unsustainable advantages and widen the gap between high-budget and lower-budget teams. Industry-wide initiatives, such as financial assistance or support in allocating and using data analytics services, could help level the playing field and promote a more sustainable environment for all teams. By ensuring that all teams have access to the services they need to compete at a baseline level, OBOS Damallsvenskan may enhance the league's competitiveness and foster a more equitable environment. Such initiatives would have implications for the future of the league, as it could ensure that all teams would have greater conditions to improve and avoid a scenario where the league is dominated by a few teams that consistently win at the expense of others.

5.4 The size of data analytics teams is key to gaining a competitive advantage

A recurrent theme across all team representatives pertains to the crucial role of human capital in extracting value from data analytics. It was also mentioned by one of the EFD representatives, Robin Blommé, who stressed the importance of utilizing data to generate actionable insights rather than merely having access to it. The respondents mentioned the significance of the number of personnel dedicated to data analytics, whether teams are using full-time analysts or splitting the workload between the coaching staff and sports directors. In this regard, the budget for data analytics services per se is not the primary concern for most lower-budget teams. Instead, the key determinant of success is the ability to allocate adequate human resources to analyze data and extract meaningful insights from it.

However, as teams with higher budgets compete across all aspects of the sport, marginal differences can become significant in terms of achieving a competitive advantage. For these teams, the budget for data analytics services may make a more substantial difference as they utilize a wider range of data analytics services to maximize each opportunity for gaining a competitive edge over their rivals. It is noteworthy that a high budget for data analytics services may not necessarily translate to success. Rather, the critical determinant of success is the availability of skilled analysts and personnel who can spend time analyzing the data and providing valuable insights.

Additionally, another issue is information asymmetry which can arise when some teams have access to better data than others, as explained by Stiglitz (2002). Data analytics is not only influenced by the team size but also by the skills of the analysts involved. The majority of the individuals that work with data analytics in women's

football are often self-taught in using these types of services which may limit the level of actionable insights that can be retrieved from the data. This situation highlights the importance of having skilled and talented analysts who can explore all opportunities for improving the team's performance.

The issue of information asymmetry is a complex and multifaceted challenge facing teams with limited budgets. Specifically, teams with lower financial resources face significant difficulties in recruiting and retaining skilled analysts capable of utilizing data analytics services to extract valuable insights from team performance data. Despite the difficulty of resolving this issue, it is imperative for the league to explore options for promoting a more level playing field for all teams, especially those with limited budgets. While it may not be possible to eliminate the advantage of better-funded teams in terms of attracting and retaining skilled analysts, other areas of team performance remain open for competition. Therefore, it is crucial for lower-budget teams to focus on developing their players' skills and team strategies, which can provide a foundation for success in the face of the data analytics advantage enjoyed by better-funded teams.

5.5 Real-time data analysis provides a competitive advantage for high-budget teams

Teams in professional sports are constantly seeking to gain a competitive advantage over their rivals and this pursuit often involves incremental improvements that accrue over time. The answers from the respondents showed that some teams have been able to establish a more sustainable competitive edge through the deployment of in-game statistical analysis. This approach involves the gathering and analysis of real-time data during the first half of a game, which is then used to inform decisions made during the half-time break. This resource-intensive process requires a dedicated team of analysts who can quickly gather and process data from the first half of the game, and who can produce actionable insights that can be immediately incorporated into the team's tactics and strategy for the second half.

The advantage gained from this approach is not limited to the half-time interval alone, but extends to the full course of the game, as teams that have access to near real-time data are better equipped to make informed decisions during the game itself. However, this advantage is not easily accessible to all teams, as the costs associated with building and maintaining a team of dedicated analysts can be prohibitively high. As a result, some teams may be at a disadvantage relative to their better-funded peers and may be unable to compete effectively over the long term. Nonetheless, the deployment of in-game statistical analysis is a promising avenue for teams seeking to establish a more sustainable competitive advantage in professional sports, however, it has to be noted that for the moment this is most likely only an option for the high-budget teams.

5.6 Price, database size, and user-friendliness are the most prioritized characteristics

The answers from the respondents indicated that most of the low-budget teams prioritized price as the most significant characteristic of data analytics services. This outcome was expected since the interviews demonstrated that low-budget teams operate with scarce resources and must consider cost-effectiveness in every investment they make. Consequently, these teams may not be able to purchase additional services, such as statistics from additional leagues.

Additionally, database size and user-friendliness were prioritized highly across every budget group. Database size allows teams to access statistics for leagues beyond their reach, which could be advantageous for low-budget teams who cannot scout players that far away. However, these additional services come at an extra cost, which may explain why low-budget teams prioritize not acquiring them. Instead, it may become an advantage for high-budget teams that have the financial resources to invest in these additional services.

Lastly, user-friendliness was also identified as an important characteristic. User-friendliness does not have anything to do with the data itself, instead, it rather focuses on the ease of gaining insights from the data and the simplicity of using the services. For low-budget teams, a more user-friendly interface could be beneficial as it could save some of their limited time and resources. Since they often lack trained personnel for data analytics purposes, being able to retrieve the right type of statistics without spending too much time is even more important for these teams.

5.7 No one-size-fits-all solution for data analytics services

The answers from the respondents showed that the teams have varying priorities and preferences regarding the features and functionalities that they consider important for their choice of data analytics services. This situation poses a difficulty in developing a service that can cater to the needs of all teams equally. Consequently, teams end up competing based on the services they can afford to equip themselves with, which generally provides a slight advantage to the teams with the financial capabilities to satisfy all their needs in this aspect. This problem is particularly prominent for lower-budget teams that may lack the necessary resources to access high-quality services.

In response to this challenge, OBOS Damallsvenskan has provided a baseline video service, Spiideo, to all teams. However, the provision of other data analytics services is contingent upon each team's financial capabilities and preferences. In other words, even though a baseline service is provided, nothing stops teams to utilize or pay for additional services that satisfy all their needs, which once again, becomes a

question of financial capabilities. This issue is aligned with what Stefan Alvé, one of the EFD representatives, mentioned concerning why they have not been able to subsidize a baseline data analytics service to all teams in OBOS Damallsvenskan in the same manner that they provided Spiideo. The reasoning behind this was that all teams do not prioritize the same things and features, thus making it extremely difficult for EFD to provide a baseline service that satisfies all parties involved. Furthermore, the insights and analysis of this study suggest that data analytics services in OBOS Damallsvenskan specifically, are primarily viewed as a tool that provides an advantage to high-budget teams. It appears that teams with significant financial resources are more likely to invest in data analytics services as a means of gaining a competitive edge, as they are willing to pay for every possible advantage that their financial capabilities may provide. This finding differs from the traditional "Moneyball" mythology, which suggests that data analytics provides a strategic advantage for teams with limited financial resources. Therefore, it may be believed to be a better option to allow each team to make their own decision regarding what service they would prefer to use, at least in the short-term, as there does not seem to be a one size fits all solution. However, it has become evident that further research is necessary to identify potential solutions for this issue.

6

Conclusions

The aim of this research study has been to investigate how women's football teams use data analytics services and what characteristics of data analytics services they prioritize, putting into perspective their budgets for data analytics. The research was conducted as a case study of OBOS Damallsvenskan, where the data collection was primarily conducted through 15 semi-structured interviews with respondents from all current teams in OBOS Damallsvenskan and EFD, representing a range of different roles within their organizations such as sporting directors, head coaches, and assistant coaches.

The findings of the research study presented several interesting insights that can help level the playing field concerning the use of data analytics services in women's football. Firstly, one of the primary insights highlighted that teams try to gain a competitive advantage over their competitors in the league, which can be done through exploiting synergies, such as sharing the costs associated with data analytics services with men's teams. This allows the teams to exploit such synergies to utilize their financial resources in other fields.

Furthermore, another primary insight was how team size for analyzing the data is believed to be a key determinant for gaining a competitive advantage. It was made clear from the respondents that their largest obstacle was not the service itself, but instead, the ability to allocate adequate human resources to analyze the data and extract meaningful insights from it.

Moreover, price, database size, and user-friendliness were considered the most prioritized characteristics for data analytics services. Low-budget teams prioritized price heavily, meaning they most likely would not purchase additional services that come at an extra cost, such as other leagues. In turn, this could become an advantage for high-budget teams that have the financial resources to invest in these additional services. Improving user-friendliness for data analytics services could become a great tool to level the playing field, as low-budget teams often lack trained personnel for data analytics purposes, therefore being able to retrieve the right type of statistics without spending too much time is even more important for these teams.

Another possible solution to help level the playing field would be to provide a baseline service to all teams, for instance by EFD. However, providing a data analytics service for all teams is more challenging since teams with different budgets prioritize different features and requirements, making it difficult to satisfy everyone through

a baseline service solution.

Since the research was conducted as a case study of OBOS Damallsvenskan, no representatives of other leagues have been interviewed. As a result, there is no guarantee that the conclusions of this research study are applicable to other women's football leagues or sports outside the realm of football. For future research, it would be interesting to explore other women's football leagues to find out if it could help validate the findings of this research study. Further on, it could be of future interest to interview players to obtain their views on the topic, since they are heavily impacted by data analytics services despite not using it on a daily basis themselves. Lastly, future research could be conducted on how a central organization, such as EFD, could provide a data analytics service that satisfies all parties.

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A

Interview guide

Introduction

Firstly, the authors presented themselves and the study by providing transparent information about the aim of the research and its methods.

Recording

Secondly, the authors asked for permission to record the interviews and explained how the data would be collected, stored, and used.

Questions

Use of data analytics services

- How do you use data analytics services in your organization?
- What data analytics services do you use?
- What do the data analytics services cost?
- What could be improved with the data analytics services?

Characteristics of data analytics services

- What characteristics do you consider when choosing data analytics services?
- How would you prioritize these characteristics?

Competition

- How do you think data analytics impacts the gap between the smaller and bigger teams?

A. Interview guide

- Have you seen any correlation between teams investing in data analytics services and their performance?

Personnel

- What size is the team that works with analyzing the data?
- Have you trained personnel on how to use the data analytics services?

Access to data analytics

- Should all teams should have access to data analytics?
- How could access to a baseline data analytics service be financed?

Other

- Is there anything related to this interview you want to share with us?

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