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**The influence of customer-based brand equity on the revenue of
Dutch Football clubs**

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ABSTRACT

In this study, the potential positive effect of customer-based brand equity of Eredivisie clubs on their revenue is examined, with athletic success acting as a moderator. Data on the customer-based brand equity of Eredivisie clubs is collected and analysed against the clubs' revenue. The findings indicate no significant relationship between the components of customer-based brand equity and the revenue of the professional football clubs. However, a significant effect of athletic success on the revenue is observed. Previous let to contrary results, that is why recommendations for future research are made.

Keywords: customer-based brand equity, professional football clubs, sport marketing

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CHAPTER 1 Introduction

The importance of customer-based brand equity in the sports industry is rising. The perfect example is the English football club Manchester United. Despite a prolonged period without securing titles in the Premier League or Champions League over the past decade, the club remained financially successful. This financial success is primarily driven by substantial revenue from sponsorships, ticket sales, merchandising, and broadcasting rights. Notably, Manchester United maintained the second-highest revenue in the Premier League, even though their on-field performance has seen them finish in the top two of the Premier League only twice in the last ten years (Statista, 2023). These revenue streams are intrinsically linked to the club's strong customer-based brand equity. This study will focus on customer-based brand equity of football clubs, and the effects on the revenue of those clubs. Keller (1993) defines customer-based brand equity as: "The differential effect that brand knowledge has on consumer response to the marketing of that brand" (p. 8). In this study three different revenue streams of football clubs will be taken into consideration: ticket sales from matches, sponsorship revenue and merchandise revenue.

Previous papers on customer-based brand equity concluded that a positive correlation exists between brand equity and economic success (Gladden and Milne, 1999 & Bauer et al., 2005). Other research indicated a direct correlation between athletic success in football leagues and the financial income of football clubs (Szymanski and Kuypers, 1999; Schloesser and Adamec, 2023). Higher league performance correlates with increased revenue for football clubs. Consequently, athletic success is a critical factor that must be considered in studies examining the economic success of football clubs. In the study performed by Bauer et al. (2005) economic success is measured through attendance. However economic success does not solely rely on the attendance in stadiums. The attendance is not a reliable measurement of economic success, as the economic success of football clubs relies also on transfers, price money, sponsorships, merchandising and ticket sales. To employ attendance as a benchmark for economic success lacks validity. To add to previous research, this study will use three different revenue streams: ticket sales, sponsoring and merchandising. Total revenue may not be a suitable metric, as certain football clubs derive a significant portion of their income from player transfers or European premiums, leading to annual fluctuations influenced by various factors. When focussing on a single year these factors could potentially skew the research findings. The studies mentioned before may be less relevant in today's perspective, because this research was conducted twenty years ago.

The aim of this study is to show that the previous results are generalizable in a different context and with a different method. The previous research has investigated the German football market or North American sports markets (Gladden and Milne, 1999 & Bauer et al., 2005). In this study the Dutch Football league the Eredivisie will be studied. Selecting the Dutch league is convenient as respondents of the survey will mostly be Dutch. Football has become increasingly commercialized in the years following

these publications, potentially amplifying the importance of customer-based brand equity. Data will be gathered from the 2022/23 season; this is the most recent season where all the necessary data is available. This study stands out as one of the few to utilize current financial data sourced from various clubs. Besides, a study like this has never been done on the Dutch football league, the Eredivisie. The research question will be: What is the effect of customer-based brand equity on the revenue of Dutch football clubs in the 2022/23 season?

This paper uses the BETS model from Bauer et al. (2005) as the bases to measure the customer-based brand equity of football clubs. The method will be projected on the Dutch Football league. To measure customer-based brand equity it is important to define the customers of professional sports teams. Mason (1999) differentiates between four distinct groups of customers of professional sport teams. In accordance with Bauer et al. (2005), only individuals identified as fans are regarded as customers in this study, thereby enabling the application of the BETS model. Fan is considered a broad term in this research, it is everyone who is familiar with the Dutch Football League, and therefore is a potential fan. In this study an online survey measured eleven indicators resulting in the four variables from the BETS model. The eleven indicators got a score between 0 and 100 for each club in the Eredivisie based on the survey. For the measuring of athletic success the EuroClubIndex(ECI) was used. The ECI is a ranking of each European football club based on a points system. Data of the revenue of the football clubs is gathered from the annual reports of the season 2022/23. Revenue in this case is the revenue regarding ticket sales, merchandising and every income stream regarding sponsorships.

In this study, the hypothesis is that there will be a positive correlation between customer-based brand equity and the revenue of a football club. The outcome of the research of Bauer et al. (2005) on the German football league supports the hypothesis. By testing multiple components of brand equity, the significance and importance of each factor can be calculated. However, sufficient variance will not be explained by the different components, as revenue is related to many factors. The results of the research will contribute to understanding the importance of brand-equity and which factors in particular correlate the most with the economic success of the club. This study, different to previous studies, measures economic success through real economic data, rather than relying solely on attendance figures. By doing so, a better representation of the relationship between brand-equity and economic success can be measured. This statement is motivated by the upcoming importance of merchandising and sponsorships, which in this study will be considered. However, a final answer on the question in which way customer-based brand equity influences the revenue of football clubs cannot be given in this study. Sufficient variance will not be explained considering the number of factors which influence the revenue of football clubs.

The remainder of this thesis is structured as follows. Chapter Two reviews the relevant literature and previous research on the topic. Chapter Three details the survey methodology and the external data sources utilized for the study. Chapter Four outlines the research methodology employed. Chapter Five presents the results and includes a discussion comparing these findings with previous studies. Chapter Six offers the conclusion based on the results. Following the conclusion, the limitations of the study are addressed. Supporting tables and figures are provided in the Appendix.

CHAPTER 2 Theoretical Framework

In constructing the theoretical framework, a variety of platforms were utilized to search for scientific articles, with the majority being sourced from ProQuest, Emerald Insight, and Google Scholar. The initial search term employed was "brand equity," which was subsequently divided into two distinct search terms: "customer-based brand equity" and "brand equity models." Additionally, the following search terms were used: "economics of professional team sports," "customer-based brand equity in team sports," and "the influence of athletic success on the economic success of sports teams."

2.1 Brand equity

2.1.1 Customer-based brand equity

The concept of brand equity is a well-established phenomenon within the marketing discipline, initially conceptualized by Aaker (1992). Aaker's seminal work elucidates how brand equity generates value through five distinct assets: brand loyalty, brand name awareness, perceived brand quality, brand associations, and proprietary brand assets. Brand loyalty primarily generates value by lowering marketing expenses, as loyal customers are less costly to retain than acquiring new ones. Brand awareness contributes to value creation by increasing the likelihood that consumers will choose a familiar brand over others, even if they have never previously purchased or used the brand. Perceived quality allows a brand to implement a premium pricing strategy, thereby enhancing profitability. Aaker (1992) also details brand associations, which encompass attributes, customer benefits, lifestyles, product classes, and competitors. These associations serve as a basis for differentiation, aiding consumers in processing information and forming positive perceptions about the brand. For instance, Ronald McDonald, the mascot for McDonald's, evokes associations with joy and happiness in children, while Coca-Cola's Santa Claus commercials evoke positive holiday sentiments. These associations contribute to a favourable brand image. In conclusion, brand equity, through its multifaceted components, generates substantial value for firms, underscoring its significance for companies operating in competitive markets.

Early research on brand equity adopted two distinct approaches. The first is the financial approach, which defines brand equity as the incremental cash flow generated by branded products compared to their unbranded counterparts (Simon & Sullivan, 1993). The second approach is customer-based brand equity, which assesses consumer responses to a brand. Keller (1993) defines customer-based brand equity as "the differential effect that brand knowledge has on consumer response to the marketing of that brand" (p. 8). Keller's (1993) work builds on Aaker's (1992) theory and further conceptualizes customer-based brand equity, emphasizing the importance of brand knowledge. Keller identifies two key components of brand knowledge: brand awareness and brand image. Brand awareness involves the recall and recognition of a brand, while brand image pertains to the perceptions formed by brand associations. Keller categorizes brand associations into three types: attributes, benefits, and attitudes. Attributes are the features that

characterize a product or service and are divided into product-related and non-product-related attributes. Product-related attributes are essential to the product or service, while non-product-related attributes are external aspects. Benefits refer to the personal values consumers attach to products, which Keller subdivides into functional, experiential, and symbolic benefits. Attitudes represent the overall evaluation of a brand by consumers and are derived from the other two types of associations. These brand associations can be assessed based on their favourability, strength, and uniqueness, collectively forming the brand image.

In summary, brand knowledge, comprising various components and factors, is the cornerstone of customer-based brand equity (CBBE from now on), influencing consumer reactions to brand marketing.

2.1.2 Brand equity models

Since the first conceptual model of brand equity a lot has changed in the marketing environment. With the logical consequence that new research followed. The CBBE conceptual model of Keller (1993) has seen additions, like the concept of brand resonance (Keller, 2001). This concept shows how brands can build relationships with their customers. It is based on brand identity, meaning, responses and relationships. Within the brand identity component, brand awareness is deepened into the breadth and depth of the brand awareness. The brand depth focuses on the brand recognition and recall. While the breadth of the brand identity emphasizes when and where people do think of the brand. The brand meaning is about the three types of brand associations: uniqueness, strength, and favourability. Brand responses refer to the responses from customers to the brand. The ultimate stage is brand relationship. Brand resonance is defined in terms of the extent to which a consumer feels he or she is “in synch” with a brand (Keller, 2001). The brand relationship is split up in two dimensions: intensity and activity. Intensity refers to the strength of attitudinal attachment and the sense of community. The activity refers to how frequently the customers buys or uses the brand. The later brand value chain model builds up on the CBBE and brand resonance model and showcased the financial impact on investments and expenditures to create brand loyalty and strong brands (Keller and Lehmann, 2003). A very important change not addressed in the standard CBBE model is the digital effects of branding. In the year of the publication, in 1993, online branding was not a factor. Right now, it is undeniable that social media and the internet play a key role in the building of brand equity (Bruhn et al., 2012). Still the social media component is also applicable to the CBBE model as shown in the research of Bruhn et al. (2012).

In conclusion, the initial models proposed by Aaker (1992) and the Customer-Based Brand Equity (CBBE) model developed by Keller (1993) have established the foundational framework for most of the subsequent research on brand equity. Keller's CBBE model evolved into the brand resonance model and the brand value chain, both of which remain pertinent despite significant transformations within the marketing industry, such as the advent of social media.

2.2 Economics of professional team sports

The team sports industry is characterized by an inverted joint production model (Neale, 1964). This industry exhibits a multi-level production process. At the first level, the contribution of individual team members is required. At the second level, the involvement of competing teams is necessary. At the third level, you need a competition which connects all these single matches into some form of competition. This competition element gives team sports industry a needed entertainment dimension.

In the United States, owners of professional sports teams are primarily viewed as profit maximisers (Fort and Quick, 1995). In contrast, in Europe, club owners are generally seen as utility maximisers, where utility is associated with on-field performance (Sloane, 1971). A key distinction among football clubs is whether they are privately or publicly owned. In England, several football clubs went public in the 1990s. Contrary to expectations, this shift did not lead to a more profit-oriented approach (Leach and Szymanski, 2015). Various explanations exist for this phenomenon. However, the economic success of a football club differs from that of typical commercial businesses. Most teams prioritize 'utility,' defined as on-field performance, over profits. The pursuit of brand extensions and the development of existing revenue streams indicate a focus on revenue maximization. Unlike most commercial businesses, where profit maximization is the primary goal, the main objective for most European football clubs is to maximize on-field performance.

A similarity with commercial business is that each business has different types of customers. Mason (1999) categorizes the various customers of sports clubs into fans, television and other media, communities that build facilities and support local clubs, and corporations that provide sponsorships. These customers all contribute to the revenue of the football clubs via different ways. Professional sports teams try to increase their revenue based on the product on the field (Richelieu, 2016). Sports teams seek for brand extensions to implement new products on different markets and gain extra revenue and increase their brand strength (Apostolopoulou, 2002). Professional football also seeks to the revenue from already existing revenue streams like broadcasting of matches and attracting new sponsors (Plumley et al., 2018). This behaviour of professional sports teams seems like normal business behaviour. Comparisons between the professional sports environment and the normal business environment have been made (Leach and Szymanski, 2015). There are some major differences between commercial businesses and football teams. Within the professional sports market the element of competition is vital. Competition is needed to keep growing because without competition, fans potentially lose interest which cost the professional team money. In the normal commercial business, firms will likely try to eliminate competition and gain a kind of monopoly position if they get the opportunity. (Dobson and Goddard, 2011).

In conclusion, the goal for the sports teams is on-field performance. To achieve this goal, the professional sports teams seek for new revenue streams and extend the already existing revenue streams.

2.3 Customer-based brand equity in the professional team sports industry

Over the past decade, sport brand management has emerged as a critical issue. Sport clubs are increasingly recognized as unique brands that must fulfil customer expectations (Bouchet & Hillairet, 2009). The first attempt to measure brand equity in a sports environment was done on multiple teams in the Major Baseball League (Boone et al., 1995). The authors found a surprising lack of brand equity for the organisations within the league. Research on this topic followed fast and a framework for assessing brand equity in professional sport followed (Gladden and Milne, 1999). This model became the original model for studying brand equity in a professional sport environment. They concluded that the brand is an important success factor for professional sport clubs. The authors assessed the brand equity of MLB, NBA, and NHL teams by multiplying stadium utilization by the company's value. This figure was then divided by the team's success in their respective leagues over a 25-year period. The hypothesis is that a less successful team with a certain level of stadium utilization has a higher brand equity than a more successful team with the same level of stadium utilization.

Multiple studies have been conducted to measure brand equity, including for satellite fans (Kerr and Gladden, 2008). Gladden and Funk (2001) sought to link brand associations and brand loyalty by identifying various indicators to measure the dimensions of CBBE as conceptualized by Keller (1993) in a sports context. One of the indicators is the coach of a professional sports team. Robinson and Miller (2003) performed qualitative research on the impact of the change of the coach on brand equity and the merchandise revenues. These studies were primarily based on the American market. European research lagged, with studies mainly focusing on image management of football clubs (Ferrand and Pages, 1999). This changed with the development of the CBBE in team sports (BETS) model (Bauer et al., 2005). After operationalizing the indicators mentioned by Gladden and Funk (2001), the BETS model provides a framework to measure the relationship between CBBE and economic success, measured in attendance, for German football clubs. The BETS model consists of two dimensions—brand image and brand awareness—encompassing four factors and 14 indicators to measure customer-based brand equity. They found that brand recall, as conceptualized by Keller, is not a reliable factor in the BETS model, resulting in four factors instead of Keller's original five (1993). Furthermore, the study concluded that brand awareness does not enhance understanding of brand equity in markets with highly knowledgeable consumers. For these product categories, it is recommended to incorporate a measure of consumer expertise to achieve a more accurate evaluation of brand equity. This methodology represented a distinct approach compared to previous studies on the subject. However, they arrived at the same conclusion as earlier studies on brand equity in football, affirming the importance of the brand in sports, as suggested by Gladden and Milne (1999) in their research on the North American sports market. Despite the different methodologies, both studies suggested a positive relationship between brand equity and economic success. However, Gladden and Milne (1999) focused on merchandise revenue as an indicator of success, while Bauer (2005) used attendance as his measure of economic success. Bauer et al. (2005) study

indicated that brand equity was a more significant factor in economic success than the athletic performance of the team.

Brand equity is believed to play a role in the economic success of a football team. Even when taken different measures of economic success. Each time there is a proven relationship between brand equity and economic success.

H1: The customer-based brand equity following the BETS model has a positive effect on the revenue of professional sports teams.

2.4 The influence of athletic success on the economic success of sports teams.

Athletic success influences total revenue directly via revenue streams as prize money. Besides in the European football context performing better gives you in the opportunity to promote to higher divisions. This means also higher prize money and revenue from television rights. On the other hand, performing well in the highest divisions of Europe secures a spot for one of the European competitions. These extra games and competitions the club can participate in, lead to an extra revenue stream. There is therefore a direct association between athletic success in the league and the income of football clubs (Szymanski and Kuypers, 1999; Schloesser and Adamec, 2023). As mentioned above, football clubs also have other revenue streams like sponsorship, merchandising and ticket sales, which are not directly influenced by the performance of the team. The role of brand equity on sponsorships in the Dutch football league is significant (Henseler et al., 2007). The same can be stated about the role of brand equity on merchandise sales (Gladden and Milne, 1999). The role of athletic success on these three revenue streams is not so clear in the published literature.

H2: The athletic success plays a role on the revenue of the football team, even when the revenue streams directly related to the team's athletic success are taken out of consideration.

The literature shows that the initial models proposed by Aaker (1992) and the Customer-Based Brand Equity (CBBE) model developed by Keller (1993) have established the foundational framework for most of the subsequent research on brand equity. When relating this to the professional sports team's industry, the literature explains that brand equity is believed to play a role in the economic success of professional sports teams. It became clear that the goal for professional sports teams is on-field performance. To achieve this goal, the professional sports teams seek for new revenue streams and extend the already existing revenue streams. Besides brand equity the literature provides that there is a direct relation between athletic success in the league and the revenue of football clubs. However, the exact influence regarding the three chosen revenue streams in this study is not clear.

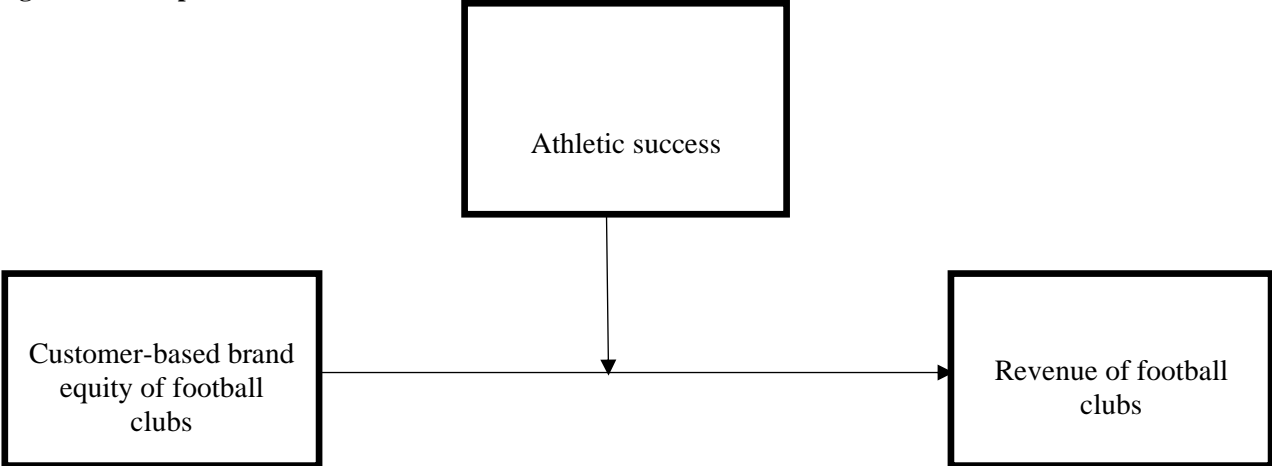
So, the hypotheses of this study are:

H1: The customer-based brand equity following the BETS model has a positive effect on the revenue of professional sports teams.

H2: The athletic success plays a role on the revenue of the football team, even when the revenue streams directly related to the team’s athletic success are taken out of consideration.

This leads to the following research question: What is the effect of customer-based brand equity on the revenue of Dutch football clubs in the 2022/23 season?

Figure 1: Conceptual model



CHAPTER 3 Data & Methodology

3.1 Research design

For the research methodology, a quantitative approach has been selected. Quantitative research emphasizes the collection of numerical data, which is then analysed to uncover relationships within the observed data. This method suits the study the best as this gives the opportunity to test the hypothesis. The revenue of football clubs will be assessed through examination of their annual reports. The other variable is the CBBE of football clubs. This is measured through a survey, with the questions based on the BETS model (Bauer et al., 2005). The BETS model is based on the CBBE model (Keller, 1993). To reach statistical significance the number of respondents must be 385. This follows from the population size of 17 million (number of Dutch citizens), a 95% confidence interval and a 5% margin of error. The needed sample size was calculated by Qualtrics which is the same program that is used for creating the survey. The online survey was distributed through social media and the website SurveySwap. The survey targeted only Dutch respondents as the goal was to measure the CBBE of the professional football teams in the Netherlands. In total the survey got 186 respondents. The survey was sent out in June of 2024 and data collection stopped in July 2024. Because of distribution via social media most respondents were relatively close to the researcher's social circle, which resulted in most respondents supporting clubs from Rotterdam, with Feyenoord being the club supported the most. The sample had a high level of expertise, 79,5% watched live Eredivisie games or watched highlights on a regular basis. In the Netherlands this percentage lays around 57% based on research from the Eredivisie (Eredivisie, 2024). The last variable, athletic success, was measured with the EuroClubIndex. A ranking of all the teams in Europe based on the outcome of every game they play.

Initially, respondents were categorized into football fans and non-football fans. The first query ascertained the extent of their engagement with the Dutch national league, Eredivisie, offering response options ranging from "not at all" to "very well." Notably, the category "a little" denoted occasional viewing of highlights and league standings, while "very well" indicated regular viewing of entire Eredivisie matches. Following this segregation, Eredivisie followers specified their favourite team. If respondents specified their favourite team, they answered four questions, all measuring the brand benefits of this team. Subsequently, each respondent was randomly assigned two or three teams, ensuring that fans were not assigned to the club they supported to avoid potential biases. Notably, supporters of rival clubs were not assigned to each other. In the Dutch national league, there were some fierce rivalries. The most famous one being 'De Klassieker' between Ajax and Feyenoord. If a Feyenoord supporter had been assigned to Ajax, their answers might have been influenced by negative biases towards Ajax. The same went for the other way around. This exception was besides Feyenoord and Ajax supporters also made for NEC and Vitesse fans towards each other. The last two rival clubs that could not get assigned each other

were SC Cambuur and SC Heerenveen. These three rivalries were chosen due to historical tensions, reflected in heightened risks of fan violence during their matches. A full overview of the survey is provided in Appendix A.

Brand awareness was assessed using brand recognition and brand familiarity. Brand recognition was measured through the identification of the club's logo. Participants were presented with the logo of their assigned team without any accompanying text and asked to identify the club solely based on the logo. Additionally, respondents indicated their familiarity with the club's existence after having answered all the questions about the club. Each team received two scores: one for brand recognition and one for brand familiarity, both measured on a scale from 0 to 100. These scores reflected the percentage of respondents who correctly recognized the club based on its logo and the percentage who were familiar with the club's existence. The average brand awareness score was the highest out of all components with a score of 90.4 (Table 1).

Brand image was measured through non-product related attributes, product-related attributes, and brand benefits. The non-product related attributes are the logo, stadium, stadium atmosphere, and regional importance (indicators in the BETS-model). The first three were measured on a scale from 0-100 with the respondents basing their rating on the uniqueness, strength, and favourability of the product. However, this was not possible for regional importance. Regional importance was to be computed by the traveling time of stadium visitors. Using traveling time as an indicator for regional importance followed from an interview, I did with Thijs van Egmond of the company Hypercube. In their collaboration with PSV, they measured the brand value of PSV and the possibility of a new stadium with regional importance as one of the parameters. Their expertise in the use of data for multiple professional sports teams and associations convinced me that this was the right indicator for regional importance. After receiving all the respondents, I had to acknowledge that the number of people visiting the stadiums of different clubs was too small to compute a good score for regional importance. Therefore, we eliminated this indicator. The non-product related attributes were the lowest rated amongst the respondents with an average score of 52.1 for this variable (Table 1).

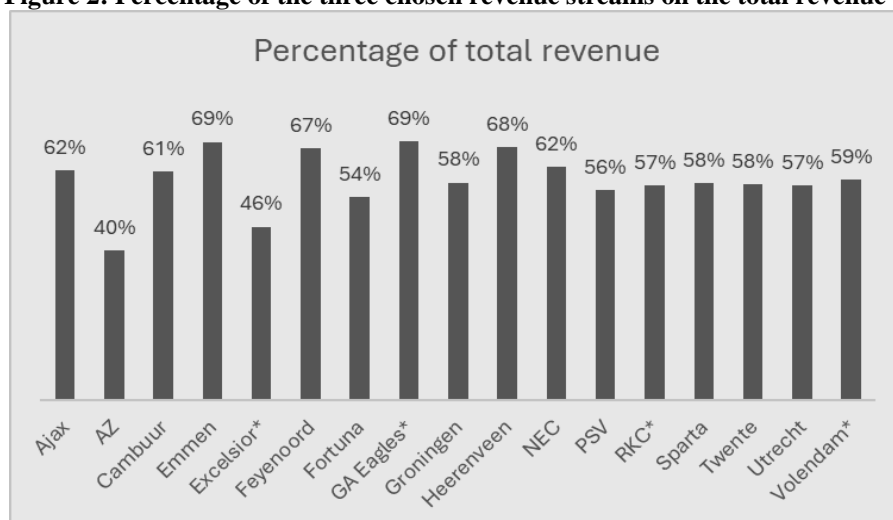
Product-related attributes were evaluated through two indicators: the coach and star player, with the star player typically serving as the team's captain in most matches. In this assessment, two components of the BETS model, perceived athletic success and management, were omitted due to potential recency bias. Given that the survey was conducted in 2024 but focused on the 2022/23 season, recent performances and managerial chaos could skew perceptions of athletic success and management effectiveness. Regarding the star player and coach, efforts were made to mitigate recency bias by focusing on the coach and star player from the beginning of the 2022/23 season. Recency bias was not completely avoidable, and this was acknowledged as a limitation of the product-related attributes component. Respondents rated these

attributes on a scale from 0 to 100 based on their perceptions of uniqueness, strength, and favourability. The mean of this variable was 56.7 however the standard deviation was with 10.7 the highest out of all variables following from the survey (Table1).

Brand benefits were measured through 'fan identification', 'nostalgia', 'interest from family and friends', and 'escape'. Fans of a football club received a statement which they rated from 'not at all' to 'a lot' on a scale from 0-100. Because of the small sample from some clubs, there were not enough respondents who supported these clubs to produce a score. Therefore, we only had 12 observations for this variable. The mean of brand benefits was 60.8 (Table 1).

Data on the revenue of the football clubs was gathered from the annual reports of the season 2022/23. Revenue in this case was the revenue regarding ticket sales, merchandising and every income stream regarding sponsorships, business seats and other business to business activities. The revenue streams regarding transfers were excluded. Transfers are fluctuating a lot between different years. Considering the study only focusses on one year, this income stream is an unreliable measure. Besides, specific numbers on transfer revenue and transfer spendings is not always given. Most Eredivisie clubs only report their transfer result (transfer income – transfer spending) in the annual reports. Furthermore, European football revenue was also left out of consideration. This included also European ticket sales. As European football is a direct result of the performance of the team in the year before this is not a good indicator of measuring the influence of brand equity. Furthermore, revenue regarding media and TV rights was also taken out of consideration. The Eredivisie gives the competing clubs a percentage of the total TV revenue based on their performance in the last ten years, with recent years having a heavier factor. This income stream is therefore also a direct result of athletic success. The different revenue streams of five teams were not specified in their annual reports. Vitesse has not published an annual report of 2022/23 because of the financial problems the club has faced that season. Therefore, this variable only has 17 observations. For the other four teams the total net revenue is given. Also, the revenue coming from media and TV is publicly available. Based on these indications an estimate of the revenues out of ticket sales, merchandising and sponsors was made. The ticket sales for these teams were calculated with the average ticket price multiplied by the size of the stadium and the 17 home games. For sponsors and merchandising an estimate based on similar size clubs in the Eredivisie was taken. To verify that these three revenue streams, even when excluding all other factors, accounted for a significant portion of the total revenue, their percentage of the total revenue was analysed. Figure 2 presents each club along with the corresponding percentage of the total revenue attributed to these three streams.

Figure 2: Percentage of the three chosen revenue streams on the total revenue of the football clubs.



It is important to note that the clubs marked with an asterisk (*) did not provide detailed information about their revenue streams; therefore, estimates were used for these clubs. The selected revenue streams—ticket sales, sponsorship, and merchandising—accounted for an average of 59.4% of the total revenue of these football clubs, excluding transfer fees (Figure 2). This percentage demonstrates that the three selected revenue streams constitute a sufficient portion of the total revenue. Consequently, these streams are crucial for the financial health of professional football clubs, highlighting the potential relevance and interest of this study for these organizations. The average revenue of the Dutch football clubs following these three revenue streams was 22,856,588 euros. The difference between the biggest and smallest club in this variable is remarkable. With the lowest score of 4,400,000 euros and the highest score of 119,071,000 euros (Table 1).

Athletic success acted as a moderator between brand equity and revenue. As a measurement for athletic success, we used the EuroClubIndex (ECI). This index, produced by Hypercube, is a global ranking of European football clubs based on every result since the start of the ranking in 2007. In an interview with Thijs van Egmond, a consultant at Hypercube, he explained the workings of the ECI. The estimated outcome of a match ranges between 1 and -1, with 0 being a draw, 1 a home win, and -1 an away win. For example, an estimated outcome of 0.30 means an expected win for the team playing at home. This is compared to the actual outcome of the match. Then the actual outcome is subtracted by the estimated outcome, so in the case of a home win: $1 - 0.30 = 0.70$. This number is then multiplied by the k-factor, which is a constant; in this example, we use 30 as the k-factor. This leads to an ECI increment of $30 * 0.70 = 21$. In this case, the home team won, which means their ECI rating would go up by 21. The ECI score of the losing team would go down by 21. It is always a zero-sum game, so the points added to one team are always subtracted from the other. This measurement of athletic success gives a better representation of the performance of a team compared to league rank, for example. By looking at every

single game, the ECI of every team provides a good indicator of the athletic success of that team. Therefore, in this research, the ECI rating of every team at the end of the 2022/23 season was taken as the measurement of athletic success. The average ECI rating of Dutch football teams was 2089, with 3039 being the highest score and 1470 the lowest score (Table 1).

Table 1: Summary statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Brand awareness	17	90.421	5.622	78.65	100
Brand image non-product	17	52.096	9.619	38.867	69.933
Brand Image products	17	56.7	10.735	36.9	73.35
Brand benefits	12	60.835	9.894	46.25	75.725
Athletic success (ECI)	17	2089.235	548.794	1470	3039
Revenue	17	22856.588	30465.134	4400	119071

Appendix A contains an exemplar of the survey format and the specific questions posed. Detailed values for each indicator corresponding to each club are summarized in Appendix B.

3.2 Data analysis

To analyse the relationship between revenue and Customer-Based Brand Equity (CBBE), with athletic success as a moderator an Ordinary Least Squares (OLS) regression was conducted. This method was chosen because it provided a clear view of the expected linear relationship between the dependent variable (revenue) and the independent variables. Specifically, OLS regression allowed to assess how changes in the independent variables affected revenue, as indicated by the β coefficients. For each unit increase in an independent variable, the β coefficient of revenue is expected to increase or decrease accordingly. Therefore, the regression equation is as follows:

$$Revenue = \beta_1 BrandAwareness + \beta_2 Non-productAttributes + \beta_3 ProductAttributes + \beta_4 BrandBenefits + \beta_5 AthleticSuccess + \varepsilon$$

When conducting this regression analysis, a significant level of multicollinearity was anticipated. This issue was assessed by examining the Variance Inflation Factor (VIF) values, which indicate the extent of multicollinearity present in the model. Should high multicollinearity be detected, it would necessitate performing separate bivariate regression analyses. In these bivariate regressions, each component of brand equity along with the variable athletic success is individually regressed against revenue.

$$Revenue = \beta_i X_i + \varepsilon$$

In both scenarios, heteroskedasticity was mitigated by employing the 'robust' command in Stata. Additionally, a Shapiro-Wilk test was conducted to assess whether the residuals conform to a normal distribution.

CHAPTER 5 Results

Prior to conducting the regression analysis, the Shapiro-Wilk test confirmed that the residuals were normally distributed, validating the use of an Ordinary Least Squares (OLS) regression. A multivariable linear regression was performed, indicating that for each unit increase in a variable, the football clubs' revenue increases by β , with the actual revenue value being β multiplied by 1000. Initially, a small portion of multicollinearity was detected through VIF-values, prompting a shift to simple linear regression for each component to mitigate this issue. For the exact values of the Shapiro-Wilk test and the VIF-values, the tables are mentioned in appendix C. The results of the different regression are listed on the down below in Table 2.

Table 2: Regression analysis

VARIABLES	(Model 1) Revenue	(Model 2) Revenue	(Model 3) Revenue	(Model 4) Revenue	(Model 5) Revenue	(Model 6) Revenue
Brand awareness	397.451 (1,586.662)	3,150.284* (1,532.107)				
Brand image non-product attributes	124.632 (487.457)		481.757 (762.117)			
Brand image product attributes	-1,814.782* (890.773)			-827.853 (1,014.095)		
Brand benefits	814.029 (575.502)				581.403 (686.502)	
Athletic success (ECI)	50.767** (15.426)					44.507*** (12.530)
Constant	-78,972.031 (134,918.999)	-261,993.916* (134,180.433)	-2,241.051 (43,131.739)	69,795.853 (62,538.378)	-6,168.129 (38,314.887)	-70,128.360*** (22,722.927)
Observations	12	17	17	17	12	17
R-squared	0.866	0.338	0.023	0.085	0.028	0.643

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

The first model yielded an R-squared value of 0.866, indicating that 86.6% of the variance in revenue can be explained by the variables included. In separate variable models, brand awareness accounted for 38.8% of the variance in revenue, which can be considered high relatively to the other variables related to CBBE. Other CBBE variables explained between 2.3% and 8.5% of the variance. The sixth model, focusing on athletic success, had a high R-squared value of 0.643, showing that athletic success explains 64.3% of the variance in revenue (Table 2).

In the first regression model (Table 2), only one variable, ECI (an indicator of athletic success), demonstrated statistical significance at the 5% level. Additionally, a modest level of significance was

observed for brand image product attributes, with a negative coefficient implying that higher scores in this domain were associated with lower revenues. This unexpected finding contrasted with the anticipated positive relationship between these variables. Upon examining the data, it became evident that a potential bias, despite efforts to mitigate it, may have influenced the analysis. The majority of the survey respondents were located in Rotterdam, leading to a suspected negative bias against Ajax Amsterdam, possibly resulting in lower assessments of brand image product attributes and non-product attributes. This while Ajax has the highest revenue out of all the Dutch football clubs. While this bias could explain the negative coefficient observed, the coefficient did not achieve statistical significance at the 5% level, thus precluding a definitive conclusion regarding its relationship with revenue. Similarly, none of the variables pertaining to CBBE demonstrated significant associations with revenue in model 1.

Models 2 through 5 (Table 2) examined the individual relationships between each variable of CBBE and revenue. In the second model, brand awareness demonstrated a modest significant effect on revenue; however, it did not achieve statistical significance at the 5% level, precluding definitive determination of its impact on revenue. None of the other variables related to CBBE exhibited significant associations with revenue based on these analyses.

The first hypothesis posited that CBBE, as per the BETS model, positively influences the revenue of professional sports teams. While I observed a modest level of significance for brand awareness in the second model, none of the variables associated with CBBE demonstrated a statistically significant impact on revenue. Besides the model not showing any significance, the survey measuring these variables only got 186 respondents. A total of 385 respondents was needed for significant results. As a result, based on the lack of significant findings in the data, I must reject the hypothesis that CBBE, following the BETS model, affects revenue for these sports teams.

The final model revealed a statistically significant relationship between athletic success (measured by ECI) and revenue across various football clubs. Specifically, an increase of 1 point in ECI score corresponded to a 44.507 increase in revenue. Given that revenue is measured in thousands, this implies that each additional ECI point leads to an €44,507 increase in revenue in this model. The model explains a substantial portion of the variance, indicating that athletic success is a crucial factor in the revenue of football clubs, even when excluding all revenue streams directly stemming from athletic success. The results of the sixth model are satisfactory, as the coefficient shows a significant effect. Both the ECI variable and the coefficient demonstrated a significance level of 0.01, indicating a strong level of significance. When the ECI operated as a moderator in the first model, it also showed a significant effect. Furthermore, it is important to emphasize that the ECI variable does not originate from the survey. Therefore, the significance of the results is not compromised by an insufficient number of survey respondents. The ECI variable, which measures athletic success, has a demonstrable significant effect on

the revenue of Eredivisie clubs. This finding underscores the importance of athletic performance in the financial outcomes of these clubs, providing robust evidence of its impact.

The second hypothesis, which posits that athletic success impacts the revenue of football teams even when revenue streams directly tied to athletic success are excluded, can be affirmed. In both models examined, athletic success demonstrated a significant positive effect on football club revenue.

Due to the small sample size and non-significant results in the regression analysis, the first hypothesis was rejected. Consequently, the answer to the central research question of this paper: ‘What is the effect of customer-based brand equity on the revenue of Dutch football clubs in the 2022/23 season?’ is that the results indicate no significant effect of customer-based brand equity on the revenue of Dutch football clubs.

CHAPTER 6 Conclusion & Discussion

This study investigated the potential relationship between customer-based brand equity (CBBE) and its effects on the revenue of Dutch football clubs. Previous research has shown a positive relationship between CBBE and economic success, although the measurements for both CBBE and economic success varied across studies. Moreover, much of the existing research has focused on the American market. The BETS model, one of the few studies focusing on a European competition, examined the relationship between CBBE and economic success in German football clubs. However, it remained uncertain whether the same effects are present in the context of the Dutch football league. Previous studies also did not utilize actual financial data provided by football clubs in their annual reports. Consistent with prior research, athletic success has been shown to influence the economic success of football clubs. To limit this influence, specific revenue streams—ticket sales, sponsorships, and merchandising—were chosen for this study, with athletic success acting as a moderator. The influence of athletic success was also measured separately to determine its effect on the three chosen revenue streams. This resulted in two hypotheses:

- H1: The customer-based brand equity following the BETS model has a positive effect on the revenue of professional sports teams.
- H2: The athletic success plays a role on the revenue of the football team, even when the revenue streams directly related to the team's athletic success are taken out of consideration.

The main objective of this study was to determine the effect of CBBE on the revenue of Dutch football clubs during the 2022/23 season. This was stated in the following research question: What is the effect of customer-based brand equity on the revenue of Dutch football clubs in the 2022/23 season?

To address this research question, an online survey was conducted to determine the values of variables describing CBBE. This survey was based on the BETS model by Bauer et al. (2005). Each respondent was randomly assigned to two or three clubs. Multiple questions about each team were asked to gauge various aspects of CBBE. An average value for each component of CBBE per club was then calculated from the survey responses. Athletic success was measured using the EuroClubIndex. A multivariate regression analysis and bivariate regression analysis was performed with these variables against the revenue of the football clubs.

None of the components of customer-based brand equity (CBBE) were significant in any of the regressions performed, leading to the conclusion that the study did not observe an effect of CBBE on the revenue of football clubs. This finding results in the rejection of the first hypothesis. However, the study demonstrated that athletic success has a significant impact on the revenue of Dutch football teams, even

when revenue streams directly resulting from athletic success are excluded. This finding supports the acceptance of the second hypothesis.

To conclude, the research question of this paper: ‘What is the effect of customer-based brand equity on the revenue of Dutch football clubs in the 2022/23 season?’ must be answered as follows: the results indicate no significant effect of customer-based brand equity on the revenue of Dutch football clubs. Furthermore, the thesis underscores the importance of avoiding biases when assessing the CBBE of football clubs. The football industry is highly subjective and, as a result, is particularly susceptible to potential biases that can affect the evaluation of CBBE.

Ultimately, the findings do not establish a correlation between the CBBE of football clubs and their revenue derived from ticket sales, merchandise, and sponsorships. These results diverge from prior research by Bauer et al. (2005) on the same topic. This discrepancy could partly be attributed to the small sample size and insufficient safeguards against potential biases in the study. Despite efforts to prevent bias—such as ensuring respondents could not rate their supported clubs or their rivals—biases persisted. Notably, the low ratings for Ajax could be explained by the majority of respondents being located in Rotterdam, where there exists a longstanding rivalry with Amsterdam, the city of Ajax. Furthermore, the sample failed to include sufficient fans of smaller clubs, resulting in some clubs receiving no scores for the fan identification variable. Another bias addressed in the study was recency bias, particularly concerning the variable of product attributes. While perceived athletic success and management were excluded early on due to concerns about recency bias, indicators such as star player and coach were included with precautions. Respondents were asked to rate the coach and star player in charge at the start of the 2022/23 season, minimizing the influence of recent events. However, since the survey was conducted shortly after the 2023/24 season, there remains a risk that recent star players and coaches still active in the Eredivisie could have been subject to recency bias, potentially impacting results for this variable.

Another reason for the different outcomes could be the differences in measuring economic success. Bauer et al. (2005) focused on stadium attendance, while this study looked at revenue from merchandising, sponsorships, and ticket sales. The choice of measurement for economic success can significantly influence study outcomes. In this study, using revenue from merchandising, sponsorships, and ticket sales, compared to Bauer’s focus on stadium attendance, represents a substantial difference. This disparity in measurement methods could explain some of the variations observed in the study outcomes.

Additionally, the BETS model, which guided the hypothesis, was based on data from a survey conducted back in 2003. A lot has changed in both brand equity research and how football clubs operate since then. This could mean that some of the factors the BETS model considers might not be as relevant today. For

instance, it doesn't account for the impact of social media, which newer studies suggest plays a significant role in building brand equity (Bruhn et al., 2012). Updating the BETS model to include these modern elements could potentially provide clearer insights for future studies.

The finding regarding the influence of athletic success aligns with Bauer et al.'s (2005) research, which similarly concluded that athletic success positively influences economic success. Despite using different measurements for both economic success and athletic success in this study, a consistent and significant positive relationship between athletic success and revenue was found. This congruence in results suggests that as athletic success increases, economic success, measured in revenue, is likely to increase as well.

Limitations & Recommendations

The recency bias mentioned earlier could be mitigated by distributing the survey between July and August when preparations for the new season begin. This timing shift would reduce recency bias as the focus shifts to the upcoming season. In this study, the survey was published in June, right after the 2023/24 season ended, due to the thesis deadline. Ideally, a survey conducted for the 2023/24 season would be preferable, but financial data from clubs is typically available around October of that year. Given the thesis deadline, the most recent available financial data was for the 2022/23 season. For future research, it is recommended to distribute the survey before the season starts and waiting until the football clubs release their financial data the following year. That approach could yield more reliable results.

Additionally, the survey was not published on a large platform that could attract respondents from across the Netherlands. Increasing the sample size and ensuring a more geographically diverse respondent pool could produce more interesting and representative results. To achieve this, future research should aim to distribute the survey on platforms that reach a broad audience, such as popular online forums, social media accounts, or news websites. This would help target fans from various clubs across the country, enhancing the study's comprehensiveness and accuracy.

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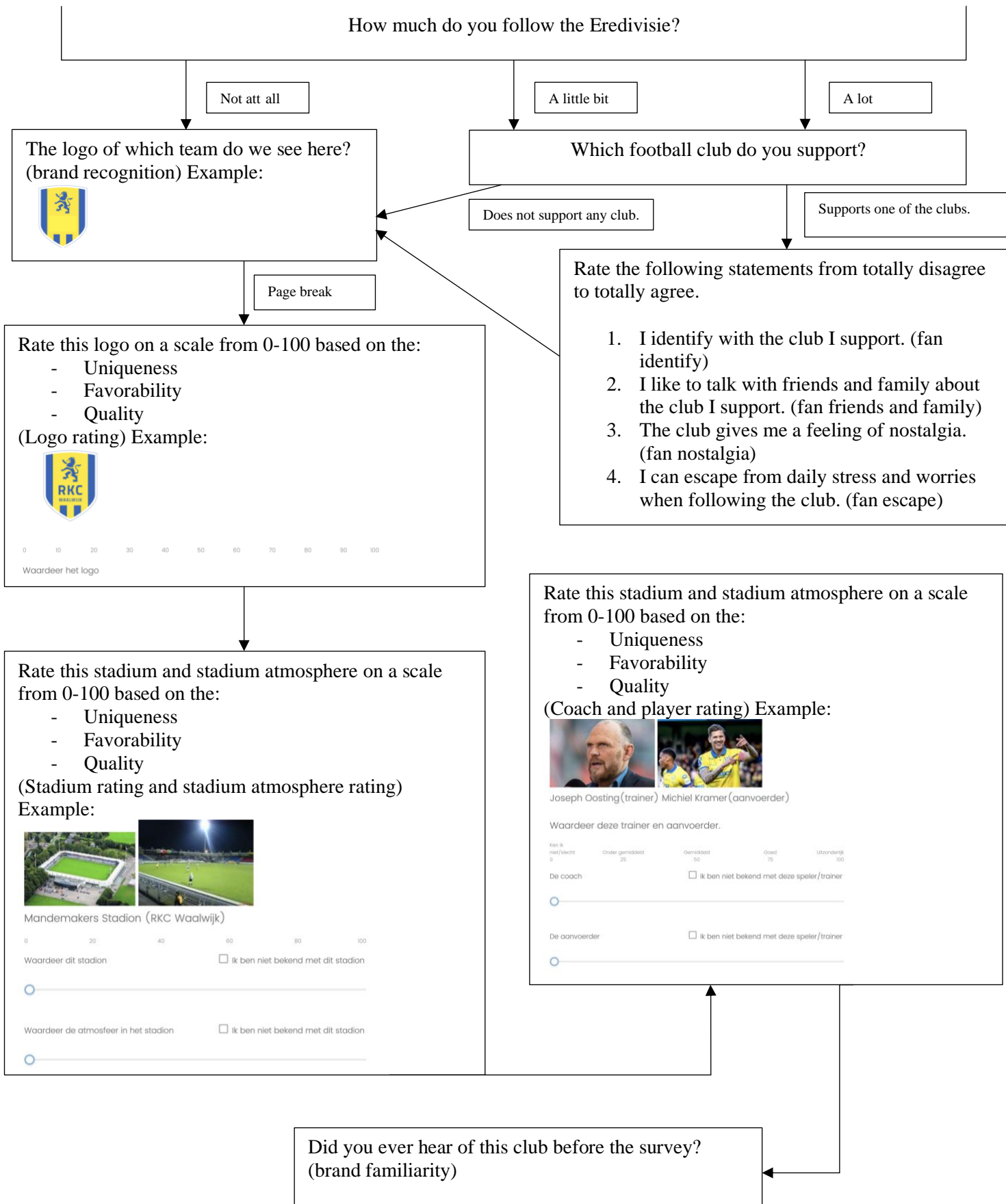
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APPENDIX A

Figure 3: Overview of the survey



In the example above, the respondent was assigned the football club RKC. Each respondent is allocated a total of three teams to evaluate. An exception is made for respondents who answered questions concerning fan benefits; these individuals are required to rate only two clubs to prevent the survey from becoming too long. Additionally, for questions related to the stadium, stadium atmosphere, coach, and player ratings, respondents are given the option to abstain from rating if they are not sufficiently familiar with the stadium, its atmosphere, the coach, or the player. The indicator measured by each question is specified in brackets following the question. The average rating of each indicator per club is documented in Table 4, located in Appendix B.

APPENDIX B

Table 3: Level of expertise in the sample

In welke mate volg je de Eredivisie?	Count	Percent	Confidence Interval of Data
Niet	38	20,5%	15.3% to 26.9%
Een beetje (ik kijk af en toe samenvattingen of de stand)	61	33,0%	26.6% to 40.0%
Ik volg het goed (ik kijk live wedstrijden van de eredivisie)	86	46,5%	39.4% to 53.7%

The first question of the survey measured the expertise level in the sample. The research of Bauer et al. (2005) showed that in a sample with only high-level expertise respondents, the brand awareness component could be problematic. The expertise level in this sample was 46,5% of high expertise and 33% of medium level of expertise. 20,5% of the sample had a low level of expertise regarding the Eredivisie. The potential problem regarding the brand awareness component is therefore not relevant for our sample.

Table 4: Each indicator score from survey

Teams	brand recognition	brand familiarity	logo rating	stadion rating	atmosphere rating	coach rating	player rating	fan identify	fan friends and family	fan nostalgia	fan escape
Ajax	100	100	47,6	41,2	45,2	33,4	40,4	63,7	69,8	68,4	44,7
AZ	88,9	94,1	42,1	58,1	54	56,3	69,1	69,2	71	70,8	65,8
Cambuur	76,2	88,9	39	38,8	38,8	65	59,3				
Emmen	63,2	94,1	54	41,4	42,9	48,9	47				
Excelsior*	86,7	92,9	57,3	29,4	44,8	57	38	74,8	97,5	72,3	58,3
Feyenoord	100	85,7	67,7	63,5	78,6	63,7	52,4	65,4	72	72,2	46,1
Fortuna	82,4	86,7	54,5	34,8	31,7	37,2	61,3	46	87,5	25	32
GA Eagles*	81,8	100	60,1	45	47	57,8	77,8	73,7	95	57,9	49,6
Groningen	96,2	90,5	52,6	57,3	54,4	39,2	35,4	51	44	54,5	35,5
Heerenveen	95,2	94,4	66,2	49,9	64,5	53,9	74,1				
NEC	88,2	82,4	63,5	53,6	60,2	51,2	66,6	75,7	76,7	63	45
PSV	100	93,3	49,7	57,9	54,9	63,3	69,1	74,4	66	70,9	68
RKC*	90	80	58,8	29,6	40,8	68,3	78,4				
Sparta	100	88,2	70,8	66,5	54,2	44,3	57,8	69	52	52	27
Twente	84,6	92,3	61,5	72,7	74,1	83,3	53,5	68,4	76,9	44,9	53,9
Utrecht	94,1	93,3	49,6	43,2	51,9	42,7	57,6	57	59,3	53	33,3
Volendam*	90	100	47,9	40,8	52,3	70,8	53,7				

These are all the indicators of the BETS-model that were measured by the survey. The first two indicators, brand recognition and familiarity, serve as metrics for assessing the brand awareness of each club. The ratings for logo, stadium, and atmosphere collectively represent non-product-related attributes, while the ratings for coach and players together constitute product-related attributes. The remaining four indicators together constitute the brand benefits component. The results of these variables are detailed in the subsequent table.

Table 5: Variables scores of each club

Teams	Brand awareness	Brand image non-product attributes	Brand Image product attributes	Brand benefits	Euro Club Index(ECI)	Chosen revenue streams *1000	Net revenue * 1000	Percentage of total revenue
Ajax	100	44,66666667	36,9	61,65	3009	€ 119.071	€ 193.600	61,5%
AZ	91,5	51,4	62,7	69,2	2686	€ 19.794	€ 49.500	40,0%
Cambuur	82,55	38,86666667	62,15		1470	€ 6.653	€ 10.900	61,0%
Emmen	78,65	46,1	47,95		1646	€ 7.107	€ 10.300	69,0%
Excelsior*	89,8	43,83333333	47,5	75,725	1553	€ 4.400	€ 9.500	46,3%
Feyenoord	92,85	69,93333333	58,05	63,925	2965	€ 66.598	€ 99.100	67,2%
Fortuna	84,55	40,33333333	49,25	47,625	1825	€ 5.646	€ 10.400	54,3%
GA Eagles*	90,9	50,7	67,8	69,05	1825	€ 8.660	€ 12.500	69,3%
Groningen	93,35	54,76666667	37,3	46,25	1477	€ 12.902	€ 22.200	58,1%
Heerenveen	94,8	60,2	64		1955	€ 11.981	€ 17.700	67,7%
NEC	85,3	59,1	58,9	65,1	1815	€ 8.774	€ 14.100	62,2%
PSV	96,65	54,16666667	66,2	69,825	3039	€ 56.355	€ 100.400	56,1%
RKC*	85	43,06666667	73,35		1757	€ 5.800	€ 10.100	57,4%
Sparta	94,1	63,83333333	51,05	50	2161	€ 9.437	€ 16.300	57,9%
Twente	88,45	69,43333333	68,4	61,025	2490	€ 22.853	€ 39.600	57,7%
Utrecht	93,7	48,23333333	50,15	50,65	2187	€ 15.931	€ 27.800	57,3%
Volendam*	95	47	62,25		1657	€ 6.600	€ 11.200	58,9%
Average	90,42	52,10	56,70	60,84	2089,24	€ 22.856,59	€ 38.541,18	58,94%

The table presents scores for each football club across all the variables in the model. The first four scores are derived from the online survey. The ECI score reflects rankings by Hypercube. The figures for three revenue streams and net revenue are sourced from the clubs' annual reports for the 2022/23 season. The percentage of total revenue indicates the proportion of the selected revenue streams relative to the total revenue.

APPENDIX C

Table 3: VIF values of multivariate regression analysis (model 1)

	VIF	1/VIF
Brand image product attributes	2.639	.379
Brand awareness	2.387	.419
EuroClubIndex (ECI)	2.311	.433
Brand benefits	1.596	.626
Brand image non-product attributes	1.463	.684
Mean VIF	2.079	.

A VIF value exceeding five is typically regarded as high, indicating problematic levels of multicollinearity. None of the variables in our analysis exceeded this threshold. A VIF of 1 suggests no multicollinearity. Variables such as brand benefits and non-product attributes exhibit minimal multicollinearity. Other components display slightly higher levels, but as long as these values remain below five, they are not considered significant issues for multivariate regression analysis.

Table 4: Shapiro-Wilk test residuals

Variable	Obs	W	V	z	Prob>z
Residuals	12	0.963	0.621	-0.928	0.823

The Shapiro-Wilk test assesses whether residuals conform to a normal distribution. The test produces a W-value, where a value closer to 1 indicates greater adherence to normality. The Prob>z, or p-value, should be less than 0.05 to reject the null hypothesis that residuals are normally distributed. In this case, the p-value of 0.823 is higher than 0.05, thus we do not reject the null hypothesis. Therefore, the test confirms that the residuals indeed follow a normal distribution.