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FINANCE-BASED BRAND VALUE MEASUREMENT OF SPORTS ACTIVITIES SECTOR COMPANIES TRADED IN STOCK ISTANBUL 100: HIROSE METHOD

BORSA İSTANBUL 100'DE SPOR SEKTÖRÜNDE İŞLEM GÖREN ŞİRKETLERİN FİNANS TEMELLİ MARKA DEĞERİ ÖLÇÜMÜ: HİROSE YÖNTEMİ

Gülşah KAZAK⁽¹⁾, Murat ÖZ⁽²⁾, Namık Kemal ERDEMİR⁽³⁾, Mustafa KAZAK⁽⁴⁾

Abstract: The aim of the study is to determine the brand values of Turkey's four largest football clubs -Galatasaray, Fenerbahçe, Beşiktaş, and Trabzonspor- whose shares are traded in Borsa Istanbul, using financial data and evaluating the relationship between championship success and branding. Hirose method was used to calculate brand values. The Hirose method was employed to calculate brand values due to its ability to provide objective and reliable results by utilizing quantitative data in the brand valuation process. This method relies solely on financial statement data, ensuring a more impartial valuation by eliminating subjective interpretation in research findings. Financial reports for the 4th quarter of 2018-2022 were used in the analysis. These reports were obtained from the Public Disclosure Platform (www.kap.org.tr) and the official websites of the companies. Although there are studies in the literature on calculating brand value in different sectors using the Hirose method, no prior research has examined the relationship between branding and championship success by determining the brand values of Turkey's four major football clubs. The findings indicate that in 2022, Galatasaray Sportive Industrial and Trade Investement Inc. had the high value. Additionally, Galatasaray was the champion of the 2022 Turkish Super League. The limitation of the study is that the sample consists of only 4 sports companies in the BIST 100 index. The increasing importance of the power of intangible assets such as brands, as required by the corporate governance approach in 21st century companies, underscores the relevance and significance of this research.

Keywords: Brand Value, Hirose Method, Financial Analysis, Football Teams, Sports Companies.

JEL: M370, M400, C60

Öz: Çalışmanın amacı, hisseleri Borsa İstanbul'da işlem gören Türkiye'nin dört büyük takımı olan Galatasaray, Fenerbahçe, Beşiktaş ve Trabzonspor takımlarının marka değerlerini şirketlerin finansal verilerini kullanarak tespit etmek ve

⁽¹⁾Mudanya University, Faculty of Arts and Social Sciences, Department of Management Information Systems; kazakgulsah42@gmail.com, ORCID: 0000-0002-1972-0820

⁽²⁾Karamanoğlu Mehmetbey University, Faculty of Economics and Administrative Sciences, Department of Business Administration; muratoz@kmu.edu.tr, ORCID: 0000-0003-4955-3848

⁽³⁾Karamanoğlu Mehmetbey University, Faculty of Economics and Administrative Sciences, Department of Business Administration; nkerdemir@kmu.edu.tr, ORCID: 0000-0003-1119-7833

⁽⁴⁾Afyonkarahisar Health Sciences University, Bolvadin Vocational School of Health Services, Department of Health Institutions Management; mustafa.kazak@afsu.edu.tr, ORCID: 0000-0002-7593-9050

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şampiyonluk ile markalaşma arasındaki ilişkiyi değerlendirmektir. Marka değerlerinin hesaplanmasında Hirose yöntemi kullanılmıştır. Hirose yönteminin tercih edilmesinin temel nedeni, marka değerlemesi sürecinde sayısal veriler kullanılarak objektif ve daha güvenilir sonuçlar elde edilmesini sağlamasıdır. Bu yöntemin, marka değerinin hesaplanmasında yalnızca finansal tablo verilerine dayanmakta olması araştırma sonuçlarında kişisel yorumlardan kaçınarak daha sağlam ve nesnel bir değerlendirme süreci sunmaktadır. Araştırmada kullanılan finansal raporlara Kamuyu Aydınlatma Platformu'ndan (www.kap.org.tr) ve şirketlerin resmi internet sitelerinden ulaşılmıştır. 2018-2022 yıllarının 4. çeyreğine ait finansal raporlar analizde kullanılmıştır. Literatürde Hirose yöntemi kullanılarak farklı sektörlerde marka değerinin hesaplanmasına ilişkin çalışmalar bulunmasına rağmen, Türkiye'nin dört büyük takımı Galatasaray, Fenerbahçe, Beşiktaş ve Trabzonspor'un şirketlerinin marka değerini bularak marka olmayı şampiyonlukla karşılaştıran bir çalışmaya rastlanmamıştır. 2022'de marka değeri en yüksek şirket Galatasaray Sportif Endüstriyel ve Ticari Yatırım A.Ş. olmuştur. Türkiye Süper Ligi'nin 2022 yılındaki şampiyon takımı Galatasaray'dır. Örneklem sadece BIST 100 endeksinde bulunan 4 spor şirketinden oluşması çalışmanın sınırlılığıdır. Marka gibi maddi olmayan varlıkların gücünün 21. yüzyıl şirketlerinde kurumsal yönetim anlayışının gereği olarak artan önemi çalışmanın amacına yön vermektedir.

Anahtar Kelimeler: Marka Değeri, Hirose Yöntemi, Finansal Analiz, Futbol Takımları, Spor Şirketleri.

1. Introduction

David A. Aaker (1991) considered brands as intangible assets of strategic importance to the business rather than being seen as a marketing asset. This shows that the brand is one of the important assets of the business. According to this view, the subject of corporate brand strength evaluation is considered to be corporate business value. In determining the corporate value of the business, corporate brand power, which reflects the intangible assets of a company, is an important source of creating corporate value (Tsuda, 2012: 157).

Brand value arises when the consumer is familiar with the brand and retains some positive, strong and unique brand associations in the person's memory (Keller, 1993: 1). Therefore, the brand is seen as having the power to guide customers' choices in purchasing decisions and even change consumer behavior in meeting customer needs. Branding gives companies the ability to gain customer trust and create loyalty by differentiating competing products or services, thus continuing to create demand and profits in the future. A strong brand creates loyal customers and reduces risk (Rocha, 2017).

Building a strong brand with loyal customers is of strategic importance for marketing managers. In this process, the fact that brand loyalty is the central element of brand management, which is considered within the concept of corporate management, shows that brands are valuable intangible assets (Matzler, Grabner-Krauter and Bidmon, 2006: 76).

In the 21st century, the power of intangible assets such as brand value, intellectual assets, competitiveness of products, and human resources is more important than the tangible assets calculated in the balance sheet items of corporate management. For example, the price of the stock based on corporate values is highly affected not only

by the financial figures in the balance sheet and income statement, but also by off-balance sheet intangible assets (Sumi, 2008: 17).

Calculating brand value, which is an important part of corporate management, has strategic importance for companies in determining customers' preferences and loyalty. Different financial-based or consumer-based methods are used to calculate brand value. In this article, the Hirose method, a brand value evaluation model developed by the Ministry of Economy, Trade and Industry (METI) of the Japanese government, is used for financial-based brand value calculation. The method was carried out on companies traded in the Sports Activities, Entertainment and Gaming Activities segments of the BIST 100 index. In the study, the companies whose brand values were determined by examining their financial statements also consist of the teams stated as the big four in the Turkish football league.

In analysing the companies that engage in sports activities in the study, the first thing to note is that in the literature analysis, there is no research on the sports sector using the Hirose method among the sectors listed in BIST in Türkiye. Another important factor is the growing sports industry today. In this growing sector, although it is a sports consumer product, it is also an industrial product.

The football economy has grown considerably, especially within the industry. In fact, it is seen that large football clubs on a global basis are competing with financially strong holdings (Ekmekçi and Ekmekçi, 2010: 28). In fact, teams that have increased their success in football leagues and increased recognition in European leagues have decided to become companies in order to increase their income by turning this recognition into brands and have become institutions that make profits by becoming companies (Soygüden, 2016: 22).

The fact that the support for football is greater in Türkiye among all branches also affects the sector greatly. In addition, teams becoming champions increases brand reliability, creating an effective reputation in the brand and convincing the consumer that the brand value is reliable (Önder, 2023).

It is important to look at the financial performance and revenue sources of sports clubs to understand the relationship between brand equity and championship success. Football clubs with successful performances are rapidly progressing towards becoming a brand and diversifying their revenues. We see that clubs with brand equity have more and more diverse sources of income. As a result, as professional football clubs are pushing for the top positions in the European and Turkish leagues due to their success performance, the revenue sources of the football clubs are rapidly increasing. In addition, we see that football clubs are rapidly taking their place in the European arena by increasing their income diversity (Ergül, 2017).

Therefore, in the study, the company with the brand value of 2022 will be determined by using the financial data between 2018 and 2022 of the companies of Fenerbahçe, Galatasaray, Beşiktaş and Trabzonspor, which are the teams in the sector and known as the big four in Türkiye, using the Hirose Method. This year, the relationship between the champion team and the company with brand value will be examined.

2. Literature Review

There are many studies in the literature on calculating the brand value of companies using the Hirose method. One of the advantages of using the Hirose method in calculating the brand value of companies compared to other methods is that it is an income-oriented approach. In other words, the method is calculated only on the basis of financial data. Another advantage is that it is actively used by the Ministry of Economy, Trade and Industry of Japan. Therefore, it is seen that the method is a valid method frequently used in national and international literature (Karahan and Akgemci, 2024: 1548).

In the examination, no study was found in which the brand value of companies operating in the sports sector was determined using the Hirose method. As a result of the literature review, studies using the method in Türkiye are presented in the literature review.

It is supported by studies in the literature that financial-based brand value calculation methods (such as the Hirose method) and other consumer-based methods used in the field of marketing give similar results (Zengin and Güngördü, 2015; Min Wang and Kuang Yu, 2015).

The majority of the studies conducted using the Hirose method consist of companies traded in Stock Istanbul. When the sectors traded in Stock Istanbul where the method is applied in the literature review are examined;

In the food industry; Kendirli, Kendirli and Akgün (2016) examined the brand value of two companies they identified in the sector between 2009 and 2013, Erkan and Palta (2017) examined the 10 food companies operating in the manufacturing sector in Stock Istanbul in 2008-2016, Kaval (2021) examined the companies in the beverage sector, Türkmen (2023) measured the brand values of the leading companies in the food and beverage industry and those with the highest transaction volume using the Hirose method.

Alper and Aydoğan (2017) measured their brand values with the Hirose method in their studies between 2009 and 2016, and Demir (2016) on companies traded in the Stock Istanbul Metal Goods, Machinery and Equipment Manufacturing sector.

In the ceramic industry; Uygurtürk, Uygurtürk and Korkmaz (2017) examined the brand values of companies in the sector between 2011 and 2015.

The brand values of the companies in the Forest Products and Furniture Sector traded in Stock Istanbul between 2013 and 2017 were examined using the Hirose/Hiroshi method.

In the banking sector; Uslu Divanoğlu, Bağcı, and Eroğlu (2019) examined brand value on banks registered in Stock Istanbul between 2014 and 2018.

Kayıhan (2019) determined the brand values of 28 companies in the Stone and Earth Based Industry sector in Stock Istanbul using the Hirose method.

Brand values of Metal Main industry companies traded in Stock Istanbul were calculated by Ulaş and Çıtak (2020) according to the Hirose Method and compared with Shareholder Values based on Economic Added Value (EVA).

Uygurtürk and Yılmaz (2020) used the Hirose method to calculate the brand value of companies operating in the Textile, Clothing and Leather sector traded on Stock Istanbul between 2014 and 2018.

Karaca and Karaca (2020) Brand values of Foreign Trade Capital Companies included in the Stock Istanbul and Sustainability index between 2013 and 2017 were determined by the Hirose method.

Avşarlıgil (2021) Brand values of technology companies traded in Stock Istanbul between 2015 and 2019 were determined by the Hirose method.

Kılıçarslan and Sucu (2022). The financial performances and brand values of capital market intermediary institutions traded in Stock Istanbul were measured and compared with the Hirose Method.

Akyüz, Ersen and Akyüz (2022). Brand values of companies traded in the paper and paper products industry in Stock Istanbul were determined by the Hirose method.

3. Methodology

There are different financial/non-financial methods to determine the brand value of the business. In the study, the HIROSE method was used to calculate the brand values of the businesses. The method is the brand valuation model developed by the Brand Valuation Committee of the Ministry of Economy, Trade and Industry of Japan (Chairman of the Board: Dr. Yoshikuni Hirose, Professor, Waseda University) (Hirose et al., 2002).

Tsuda (2012: 157-158) defined this model, which objectively calculates a company's brand value from data, as the METI model. METI/HIROSE model calculates corporate brand value based solely on accounting information.

The model was developed to objectively determine brand value by using financial data of businesses (Ceylan, 2019: 391; Can and Sağlam, 2021: 112; Eyile, 2019: 755). In addition, the model also provides a general methodology that can be easily expanded for the valuation of intangible assets other than brands (Beccacec and Borgonovo, 2009: 251).

3.1. Sample of the Study and Data Used

The 5-year data between 2018-2022 of 4 joint stock companies traded in the Sports Activities, Entertainment and Gaming Activities sector in the BIST-100 index Sports Entertainment Leisure Services sector were examined.

Table 1. Companies Traded in Sports Activities, Entertainment and Gaming Activities

Code	Company Title
BJKAS	Beşiktaş Football Investments Industry and Trade Inc.
FENER	Fenerbahçe Football Inc.
GSRAY	Galatasaray Sportive Industrial and Trade Investement Inc.
TSPOR	Trabzonspor Sportive Investment and Football Management Trade Inc.

In Table 1, data regarding the companies traded in sports activities, entertainment and gaming activities in the BIST 100 index are available on the public disclosure platform (KAP). The data used in the research was obtained from the balance sheets,

income statements and other published reports (such as activity reports, independent auditor reports) published by the companies between 2018 and 2022.

Table 2. Reports from which the data used in the method were obtained

Items Used in Analysis	Reports Where Data Was Obtained
Revenue (Sales Revenue)	Income Statement
Cost of Goods Sold	Income Statement
Advertising and Marketing Expenses	Income Statement – Independent Audit Report
Operating Expenses	Income Statement – Independent Audit Report
Non-Core Activity Sales	Income Statement – Independent Audit Report

Table 2 shows the data used for the variables determined in the method and the reports from which these data were obtained.

3.2. Limitation of the Research

If the data obtained from the balance sheet, income statement and other reports published by the business regarding the items used in the calculation of the variables determined in the research method are missing, there is a limitation in calculating the brand value.

4. Findings

4. 1. Hirose Method Drivers and Calculation

The Hirose report states that the business characteristic of the brand is to "identify" and "differentiate" itself with other companies or competing products. Businesses create this identification and differentiation by using expressions such as emblems, symbols, packaging designs, logos and brand names. Most importantly, it is necessary to develop customer loyalty and trust through the brand and maintain a continuous relationship with customers. In order to fulfill all the requirements in this process, it is stated that it is necessary to use "price advantage, create a high degree of loyalty and brand expansion powers" to create a competitive advantage through the brand and increase current and future cash flows. The variables of the Hirose method were created under these three approaches (Hirose et al. 2002: 10).

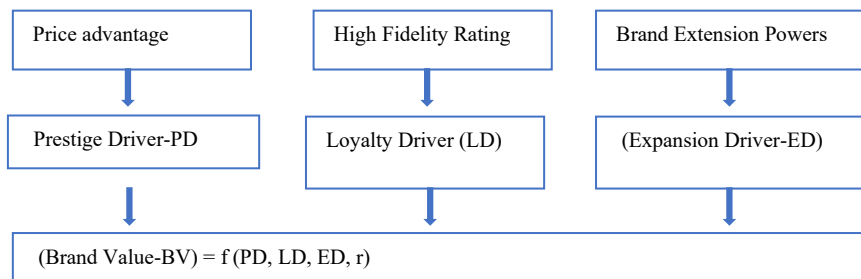


Figure 1. The variables of the Hirose method

The method is calculated using the data in publicly published financial reports of businesses. The prestige driver shows the price advantage. The loyalty driver refers

to the reliability perceived by customers and can be measured by sales consistency. The expansion driver is calculated by focusing on the relationship of the net sales growth rate with the business distribution power. Brand value; It is calculated by multiplying the prestige, loyalty and expansion drivers and dividing by the risk-free interest rate (Tsuda, 2012: 158).

As a result of the explanation, the brand value formula in the METI report is given as follows (Hirose et al. 2002: 15).

$$BV = f(PD, LD, ED, r) \quad (1)$$

$$BV = \frac{PD}{r} \times LD \times ED \quad (2)$$

4.1.2. Findings Regarding Hirose Method Drivers

Excel program was used to calculate the formulas used in the analysis. Data from the 4th quarter of the financial reports between 2018 and 2022 were used in the research.

4.1.2.1. Prestige Driver (PD) Calculation

In the published report, the formula of the prestige driver calculated regarding the ability to constantly sell the product at higher prices by comparing it with competitors in order to provide a price advantage is expressed as follows (Hirose et al. 2002: 13).

$$PD = \text{Excess Profit Rate} \times \text{Brand Association Rate} \times \text{Sales Cost}$$

$$PD = [5\text{-year Average } \{(\text{Company Sales} / \text{Company Cost of Sales} - \text{Company Sales Benchmark Company} / \text{Cost of Sales of a Benchmark Company} \times \text{Advertising and Promotion Company's Cost Ratio})\} \times \text{Company's Cost of Sales}]$$

The reason for the values discussed in the formula is given step by step in the report.

- Under the assumption of the same quality and function for the sales cost per unit, the cost of sales per sale is taken into consideration in calculating the unit price index.
- In order to make a comparison, the cost of sales per sale of the company with the smallest unit price index within the $\pm 3\sigma$ range in the same sector is taken into consideration.
- To calculate excess profitability, the last 5-year average of the unit price index difference is taken (The Committee decided that it is appropriate to choose the last 5 years to reflect the recent structural changes in the economy and the increasing pace of institutional innovations).
- To calculate the brand association ratio, the brand management cost ratio is considered. In calculating this value, it is necessary to subtract the part spent on the development, maintenance and management of the brand from the total cost spent by the company to earn extra profit (the advertising and promotion cost rate was used as a figure representing the brand management cost rate).

The formula created for this process is;

$$PD = \frac{1}{5} \sum_{n=-4}^0 \left[\left(\frac{Q}{COGS} - \frac{Q^*}{COGS^*} \right) \times \frac{APE}{OE} \right] \times COGS_0 \quad (3)$$

PD: Prestige Driver

Q: Sales

COGS: Cost of goods sold

S*: Sales of the company being compared

COGS*: Cost of goods sold of the comparison company

APE: Advertising and promotion expenses

OE: Operating expenses

COGS₀: COGS value in the current period, which is the year in which the company's brand value is calculated

In the calculation of the prestige driver, Q/COGS values of businesses are calculated separately for each year. The values of businesses with the lowest Q*/COGS* value over the years are taken and included in the calculation. Revenue amounts were taken as sales revenues of the companies determined in the study, and the companies with the smallest Q*/COGS* ratio over the five years are given in Table 3.

Table 3. Q*/COGS* Values for Years

Years	Company Code	Q*/COGS*
2018	FENERBAHÇE	1,117713342
2019	BJKAS	0,761882986
2020	GSRAY	0,689822545
2021	TSPOR	0,7572033
2022	TSPOR	0,580630226

In the calculation, the smallest Q*/COGS* value determined separately for each year was subtracted from the Q/COGS data of all companies for each year. The result was multiplied by the APE/OE ratio. Prestige driver were calculated by taking the average of the values obtained as a result of the multiplication for each company and multiplying the result with the COGS₀ value of the year 2022 determined to calculate the brand value.

Table 4. Data Used in Prestige Driver Calculation and Its Result

Company	Years	Q/COGS	APE/OE	Multipli cation Value	2022 Yılı Cogs ₀	Prestige Driver
Beşiktaş	2018	1,4608715	0,25032805	0,09	1.295.418.952	57.573.441,98 ₺
	2019	0,76188299	0,09515511	0,00		
	2020	0,76188299	0,40228075	0,03		
	2021	1,07410027	0,16172053	0,05		

	2022	0,76262171	0,30814631	0,06		
Fenerbahçe	2018	1,11771334	0,33427272	0,00	2.318.736.872	147.430.110,36 ₺
	2019	0,92609583	0,41091994	0,07		
	2020	0,76022765	0,49381691	0,03		
	2021	0,88626715	0,25296203	0,03		
	2022	0,88871012	0,59405556	0,18		
Galatasaray	2018	1,4581339	0,31562453	0,11	2.304.181.419	305.146.495,38 ₺
	2019	1,1459439	1,0251204	0,39		
	2020	0,68982255	0,74265854	0,00		
	2021	0,98675127	0,31768282	0,07		
	2022	0,76501671	0,47769735	0,09		
Trabzonspor	2018	1,28851622	0	0	1.794.762.550	18.639.617,10 ₺
	2019	1,49066499	0,05228178	0,04		
	2020	0,8332093	0,09642306	0,01		
	2021	0,7572033	0,07687288	0,00		
	2022	0,58063023	0,07556256	0,00		

Data regarding the prestige drivers of companies are given in table 4. Regarding the data, the 2018 financial reports of Trabzonspor Sportive Investment and Football Management Trade Inc. were examined and the advertising and marketing expense item of the company in that year could not be determined.

4.1.2.2. Loyalty Driver (LD) Calculation

In the method, the loyalty driver is the factor that focuses on a brand's ability to maintain stable sales over a long period of time based on highly loyal customers. The method expresses the effect of a brand as Prestige Driver and Loyalty Driver. Both variables reflect the price and quantity effects of the cash flows created by the brand in its relationship with its customers. The Loyalty Driver is indicative of highly loyal customers. As a result, the method assumes that it is sufficient to use "stability of sales cost" as a parameter for the Loyalty Driver, since the data is objective based on financial statement data and reflects the growth and decline of the markets (Hirose et al. 2002: 72).

Therefor, to calculate the loyalty driver, the average (μ) and standard deviation (σ) of the cost of sales for 5 years were calculated and the formula $(\mu - \sigma)/\mu$ was defined by taking the ratio of the difference between the standard deviation and the average to the average (Hirose et al. 2002: 73).

$$LD = \frac{\mu_C - \sigma_C}{\mu_C} \quad (4)$$

μ_C = 5-Year Average Cost of Sales

σ_c = Standard Deviation of Cost of Sales

If the cost of sales figure is stable, the standard deviation should be small and the Loyalty Driver value, defined as $(\mu - \sigma)/\mu$, should approach 1 (Hirose et al. 2002: 73). Data regarding the loyalty variable values of companies are given in table 5 below.

Table 5. Loyalty Variable Values of Companies

Company	Years	Cost of Sales (Smm)	MC	ΣC	Loyalty Driver
Beşiktaş	2018	620.293.100	744.028.341	314838644,2	0,576845898
	2019	653.419.520			
	2020	653.419.520			
	2021	497.590.611			
	2022	1.295.418.952			
Fenerbahçe	2018	796.617.262	973.633.271	769917699,6	0,209232344
	2019	587.764.233			
	2020	388.067.257			
	2021	776.980.733			
	2022	2.318.736.872			
Galatasaray	2018	339.936.156	1.106.316.056	738083332,6	0,332845864
	2019	785.145.803			
	2020	896.864.268			
	2021	1.205.452.635			
	2022	2.304.181.419			
Trabzonspor	2018	280.741.567	734.631.168	638169648,3	0,131306054
	2019	299.410.933			
	2020	431.052.922			
	2021	867.187.868			
	2022	1.794.762.550			

4.1.2.3. Expansion Driver (ED) Calculation

With the Expansion Driver, the focus is on having the ability to expand in different industries, including the markets in which a widely known brand is located, and in international markets outside the current geography. With this variable, the income

obtained from net sales other than the income that constitutes the real operating of the business and the income obtained from sales consisting of international activities are evaluated (Hirose et al. 2002: 74-76).

The committee states that in calculating the expansion driver, the company's overseas sales and sales outside the real operating should be taken into account and the data of the last 3 years, including the year in which the analysis was made, should be taken into consideration (Hirose et al. 2002: 76). When the studies in the literature are examined, it is seen that 3-year sales data of businesses are mostly used in calculating the expansion driver (Demirtaş and Orçun, 2022: 108; Satılmış, 2022:40; Gökbayrak, 2019: 17; Uslu Divanoğlu, Bağcı, and Eroğlu, 2019: 2571). In addition, using data from the last 2 years (Uygurtürk, Uygurtürk, and Korkmaz, 2017:17; Beccacec and Borgonovo, 2009: 252; Kayıhan, 2019: 3643; Eyile, 2019: 756) and the last 5 years (Baş and Ardil, 2018:13).) studies are also available.

As determined by the committee in the study, the expansion driver was calculated with the three-year average of annual growth.

$$ED = \frac{1}{2} \left\{ \frac{1}{2} \sum_{i=-1}^0 \left(\frac{OS_i - OS_{i-1}}{OS_{i-1}} + 1 \right) + \left(\frac{NOS_i - NOS_{i-1}}{NOS_{i-1}} + 1 \right) \right\} \quad (5)$$

OS: Average Growth Rate of Overseas Sales

NOS: Growth Rate of Non-Operating Net Sales

In the analysis, investment income and financial income of companies were taken as non-core operating income in the calculation of the expansion driver. It was determined that the companies had no overseas sales in their financial reports and all other published reports, and this value was taken as 0 and the calculation was made.

Table 1. Expansion Driver Values of Companies

Companies	Years	Overseas Sales	Non-Operating Net Sales	Os Faktor	Nos Faktor	Expansion Driver
Beşiktaş	2020	0	191.228.372	0	0	0,775444
	2021	0	312.480.843	0	1,634071554	
	2022	0	458.628.934	0	1,467702562	
Fenerbahçe	2020	0	357.011.062	0	0	0,762024
	2021	0	609.458.839	0	1,70711472	
	2022	0	817.273.925	0	1,340982972	
Galatasaray	2020	0	82.524.639	0	0	0,605845
	2021	0	145.972.975	0	1,768841121	
	2022	0	95.545.189	0	0,65454026	
Trabzonspor	2020	0	101.652.122	0	0	1,270645
	2021	0	325.637.094	0	3,203446102	

	2022	0	611.916.113	0	1,879135161	
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4.1.2.4. Brand Value of Companies with the Hirose Method

After calculating the variables of the method in Table 7, the brand value of the companies was calculated by applying the formula determined in the method. The r variable used in calculating the brand value is expressed as the risk-free rate of interest obtain the present value of the brand value. In the committee report, it was stated that the yields of long-term bonds with high credit, such as long-term government bonds, could be used as an example of the risk-free interest rate (METİ, 2002: 64).

Table 2. Brand Values of Companies in 2022.

Companies	Prestij Driver	Loyalty Driver	Expansion Driver	r	Hirose Brand Value - ₺
Beşiktaş	57.573.441,98	0,576845898	0,775444	0,1023	₺251.742.655,54
Fenerbahçe	147.430.110,36	0,209232344	0,762024	0,1023	₺229.777.778,86
Galatasaray	305.146.495,38	0,332845864	0,605845	0,1023	₺601.502.512,10
Trabzonspor	18.639.617,10	0,131306054	1,270645	0,1023	₺30.399.772,60

In calculating the formula, 10,230, the highest value of the day among the Turkish bond yield December 30, 2022, was taken for the r variable. Data access was obtained from Investing.com (Investing, 2023).

The company with the highest brand value in the Hirose method brand value calculation is Galatasaray Sportive Industrial and Trade Investments Inc. As a result of the calculation, the company with the lowest brand value is Trabzonspor Sportive Investment and Football Management Trade Inc.

Among the football teams affiliated with the companies, the champion team in the Turkish 2022 Super League is Galatasaray.

5. Conclusion

The study was conducted on companies traded in the sports activities sector in BIST 100. These companies are the four successful football clubs referred to as the big four in Türkiye. The teams of Beşiktaş, Trabzonspor, Galatasaray and Fenerbahçe are also at the top of the Turkish football league and have championships.

The fact that the most important income item for sports businesses is sponsorship income makes the prestige and recognition of the teams important as the basis for providing sponsor support (Akbel, 2023). It is also stated that teams that gain brand value also increase their income sources (Soygüden, 2016). Football clubs felt the need to become companies in order to reflect their success in sports to their commercial income and to do professional brand marketing (galatasaray.org, 2023).

Beşiktaş Football Investments Industry and Trade Inc. on July 18, 1995 (bjk.com.tr, 2023), Fenerbahçe Football Inc. on June 10, 1998 (www.fenerbahce.org, 2023), Galatasaray Sportive Industrial and Trade Investment Inc. November 26, 1997

(sportif.galatasaray.org, 2023) and Trabzonspor Sportive Investment and Football Management Trade Inc. became a company on March 28, 1994 (kap.org.tr, 2023).

It states that the company brands that are in the best position to continue generating demand and profits in the future are those that perform strongly relative to the competition (Rocha, 2017). When evaluated on the basis of the sector covered in the research, it is seen that the diversity of income sources of companies that are successful in the Turkish Super League and have achieved brand value has increased. In sponsorship income, which constitutes a significant part of the income item, it is seen that sponsors prefer teams that are successful in the European and Turkish leagues, and as their success increases, they also increase their other income sources (Soygüden, 2016: 33).

Championship success significantly increases the brand value of sports clubs. This success increases the recognition and reputation of the club and leads to an increase in sponsorship and advertising revenues. For example, Fenerbahçe's brand value increased by 38% in the 2014-2015 season, reaching USD 120 million (aktifbank, 2016).

The increased brand value of clubs offers sponsors the opportunity to reach a wider audience and creates a more attractive investment environment for investors. In addition, fans are proud of the club's achievements, which increases their loyalty, which in turn increases the demand for the club's products.

The brand value of the companies of the four major teams in the Turkish league included in the study was determined for 2022 by using the financial data between 2018 and 2022 using the Hirose method. Since the method is based only on financial data, no inference regarding consumer behavior can be obtained. Therefore, no other inference can be made other than the values obtained from the financial statements.

The fact that no other study can be found on brand value measurement using the same or different methods on the companies where the method is applied prevents the comparison of the research conclusions.

As a result of the analysis, the company with the highest brand value in 2022 is Galatasaray Sportive Industrial and Trade Investment Inc. has happened. The second highest brand value is Beşiktaş Football Investments Industry and Trade Inc. and this company is Fenerbahçe Football Inc. is watching. As a result of the results, the company with the lowest brand value is Trabzonspor Sportive Investment and Football Management Trade Inc.

One of the data used in the prestige variable in the method is advertising and promotion expenses. The amount of this expense item could not be reached in the published reports of Trabzonspor Sportive Investment and Football Management Trade Inc. in 2018. It is thought that this situation affects the brand value of the company.

In the literature, studies have been found examining the financial success of companies between 2017-2020 and their income distribution in 2013-2014. According to the analysis results of the Altman Z Score Model on the financial success status of the companies, it was concluded that the success status of BJKAS in 2020 was uncertain and other companies were considered financially unsuccessful in the relevant period (Tutar and Medetoğlu, 2022). When the income distributions

of the companies were examined in 2013-2014, the company with the highest income was determined to be Fenerbahçe. This company is followed by Galatasaray, then Beşiktaş and Trabzonspor in fourth place (Soygüden, 2016).

Galatasaray became the champion team in the 2022 Turkish Super League. In addition, Galatasaray is the team from Türkiye participating in the 2021-2022 UEFA Champions League. As a result of the analysis, the company with the highest brand value in 2022 is Galatasaray Sportive Industrial and Trade Investment Inc. This can be interpreted as the income of the teams that are successful in the league increasing, thus increasing their brand value.

It is thought that the research conducted using the Hirose method in measuring the brand value of companies carrying out sports activities in the BIST 100 index will contribute to the literature. In addition, the lack of studies evaluating the brand value and sports achievements of companies in the sports activities sector prevents the comparison of research results. It is important to increase studies in order to contribute to the literature.

In future studies, it may be important to link club revenues to new revenue sources such as digital media, fan engagement and internationalization, diversify financial methods (e.g., net present value and internal rate of return), and examine sponsorship and investor behavior in depth. Furthermore, emphasizing the financial impact of fan participation and examining the impact of international success on brand value may offer opportunities for football clubs to develop new revenue models and strategies.

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