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The Effect of Brand Naming Criteria on Market Performance Using Regression Analysis

Beyza ÖZKAN[1] Metin Berk ÇETİN[2] Yavuz ÖZDEMİR[3] Mustafa YILDIRIM[4]

ABSTRACT

This study examines the impact of brand naming criteria on market performance in the pharmaceutical industry using regression analysis. The selection of a brand name plays a crucial role in shaping consumer perception and sales success, requiring the assessment of both quantitative and qualitative criteria. Based on established literature, key attributes such as memorability, ease of pronunciation, reliability, uniqueness, association with the active ingredient, use of strong letters, and brevity were identified. Their influence on sales performance was then analyzed. Two regression models were developed: the first included 14 drugs with high market shares. However, due to an imbalance in the distribution of market shares, the model's significance level was found to be low. In the second model, two outlier drugs—ENOX and OKSAPAR—with disproportionately high market shares were excluded, and the analysis was conducted on the remaining 12 drugs. This adjustment led to improved model significance and revealed that memorability, ease of pronunciation, and reliability were the most influential factors on sales performance. The study offers a systematic approach to brand name selection in the pharmaceutical sector and serves as a valuable guide for decision-makers. The findings have the potential to inform effective brand strategies and enhance competitive advantage in the market.

Keywords: Pharmaceutical Industry, Pharmaceutical Brand Name, Regression Analysis, Market Share Analysis

JEL Classification Codes: M30, M31

Regresyon Analizi İle Marka İsimlendirme Kriterlerinin Pazar Performansina Etkisinin İncelenmesi

ÖZ

Bu çalışma, ilaç sektöründe marka isimlendirme kriterlerinin pazar performansı üzerindeki etkisini regresyon analizi yöntemiyle incelemektedir. Marka adı seçimi, tüketici algısı ve satış başarısı açısından kritik öneme sahiptir ve hem nicel hem de nitel kriterlerin değerlendirilmesini gerektirir. Çalışmada literatürde tanımlanan kriterler doğrultusunda hatırlanabilirlik, telaffuz kolaylığı, güvenilirlik, özgünlük, etken madde çağrışımı, güçlü harf kullanımı ve kısalık gibi özellikler belirlenmiş; bu kriterlerin satış performansına etkisi analiz edilmiştir. Araştırma kapsamında iki farklı model oluşturulmuştur: İlk modelde pazar payı yüksek olan 14 ilaç değerlendirilmiş, ancak dağılımdaki dengesizlik nedeniyle modelin anlamlılık düzeyi düşük bulunmuştur. İkinci modelde ise pazar payı aşırı yüksek olan ENOX ve OKSAPAR markaları veri setinden çıkarılarak kalan 12 ilaç üzerinden analiz gerçekleştirilmiştir. Bu model, daha anlamlı sonuçlar sunmuş ve satış performansı üzerinde en etkili kriterlerin hatırlanabilirlik, telaffuz kolaylığı ve güvenilirlik olduğunu ortaya koymuştur. Elde edilen bulgular, marka adı belirleme sürecine sistematik bir yaklaşım sunmakta ve sektörde rekabet gücünü artıracak stratejilerin geliştirilmesine katkı sağlamaktadır.

Anahtar Kelimeler: İlaç Sektörü, İlaç Marka İsmi, Regresyon Analizi, Pazar Payı Analizi

JEL Sınıflandırma Kodları: M30, M31

[1] Istanbul Health and Technology University, Faculty of Engineering and Natural Sciences, Department of Industrial Engineering, beyzaaozkan2003@gmail.com

[2] Istanbul Health and Technology University, Faculty of Engineering and Natural Sciences, Department of Industrial Engineering, c.metinberk@hotmail.com

[3] Assoc. Prof., Istanbul Health and Technology University, Faculty of Engineering and Natural Sciences, Department of Industrial Engineering, yavuz.ozdemir@istun.edu.tr

[4] Dr., Istanbul Health and Technology University, Faculty of Engineering and Natural Sciences, Department of Industrial Engineering, mustafa.yildirim@istun.edu.tr

GENİŞLETİLMİŞ ÖZET

Amaç ve Kapsam:

Bu çalışma, ilaç sektöründe marka isimlendirme kriterlerinin pazar performansına etkisini regresyon analizi kullanarak incelemektedir. Marka adı seçimi hem tüketici algısı hem de pazar performansı açısından kritik bir rol oynamakta olup, şirketlerin rekabet gücünü artırmak için dikkatle yönetmesi gereken bir süreçtir. Bu bağlamda, çalışmanın amacı, marka adının hatırlanabilirlik, telaffuz kolaylığı, güvenilirlik ve diğer kriterler açısından pazar payı üzerindeki etkisini belirlemektir. Elde edilen bulgular, ilaç sektöründe marka isimlendirme sürecinin bilimsel bir yaklaşımla optimize edilmesine katkı sağlamaktadır

Yöntem:

Bu araştırmada, marka isimlendirme kriterlerinin ilaçların pazar başarısı üzerindeki etkisini incelemek amacıyla regresyon analizi uygulanmıştır. Çalışma kapsamında 14 farklı ilaç seçilerek analiz edilmiş, ancak pazar payları arasındaki dengesizlik nedeniyle modelin anlamlılığı düşük bulunmuştur. Bunun üzerine, pazar payı aşırı yüksek olan iki ilaç veri setinden çıkarılarak 12 ilaç üzerinden yeni bir analiz yapılmıştır. Regresyon modeli bağımsız değişkenler olarak hatırlanabilirlik, telaffuz kolaylığı, güvenilirlik, kısalık, güçlü harf kullanımı, özgünlük ve etken madde çağrışımı kriterlerini ele almış ve bunların pazar payı üzerindeki etkisini belirlemeyi amaçlamıştır.

Bulgular:

Regresyon analizi sonucunda, ilaç marka isimlerinin pazarlama başarısı üzerinde belirleyici olan önemli faktörlerin hatırlanabilirlik, telaffuz kolaylığı ve güvenilirlik olduğu ortaya konmuştur. Pazar payı açısından en büyük etkiye sahip kriterlerin bu özellikler olduğu istatistiksel olarak anlamlı bulunmuştur ($p < 0.05$). Bununla birlikte, kısalık, güçlü harf kullanımı ve etken madde çağrışımı gibi diğer faktörlerin pazar payı üzerindeki etkisi istatistiksel olarak anlamlı bulunmamıştır. Ayrıca, pazar payı aşırı yüksek olan ilaçların modele dahil edilmesi durumunda, modelin anlamlılığının azaldığı görülmüştür. Bu nedenle, modelin güvenilirliğini artırmak için belirli ilaçların analiz dışı bırakılması gerekmiştir.

Sonuç ve Tartışma:

Bu çalışma, ilaç sektöründe marka isimlendirme sürecinin bilimsel bir yaklaşımla ele alınması gerektiğini vurgulamaktadır. Elde edilen bulgular, marka adının hatırlanabilirliğini ve telaffuz kolaylığını artıran stratejilerin, tüketici algısını ve pazar performansını olumlu yönde etkilediğini göstermektedir. Bununla birlikte, ilaç markalarının isimlendirme sürecinde etken madde çağrışımı veya güçlü harf kullanımı gibi faktörlerin beklenenden daha az etkili olduğu gözlemlenmiştir. Özellikle, ilaç pazarında büyük paya sahip ilaçların regresyon modeline dahil edilmesinin modelin anlamlılığını olumsuz etkilediği ve bu nedenle belirli ölçütlere göre veri setinden çıkarılması gerekebileceği sonucuna varılmıştır. Gelecek çalışmalar, farklı ürün kategorilerinde ve farklı pazar koşullarında marka isimlendirme sürecinin etkilerini daha ayrıntılı inceleyerek, ilaç sektöründeki markalaşma stratejilerine yön verebilir.

1. INTRODUCTION

1.1 BRAND

Branding means to attribute "a name or image" to something to make it memorable or recognizable when exposed to a reference. (Willis & Delbaere, 2022). A brand name is one of the most potent elements shaping a business's identity and connection with consumers. Traditionally, brands have used various linguistic methods to create attention-grabbing and memorable names (Lowrey et al., 2007). This is because an effective brand name makes it possible to leave a lasting impression in the minds of consumers. Catchy names establish the identity of the product or service and create a strong relationship with the target audience. Moreover, through the names created, brands can emphasize their unique characteristics and differentiate themselves from their competitors. For example, names created using linguistic techniques such as alliteration, rhyme, or simile stick in people's memories for a long time. This strengthens brand awareness and creates a loyal customer base. As a result, the use of linguistic methods is important in brand marketing strategies and enables them to communicate effectively with consumers.

A study by Klink (2000) shows that meaningful brand names using sound symbolism and semantic embedding are more liked by consumers and positioned more strongly in the mind (Klink, 2000). Yorkston and Menon (2004) examine how the phonetic structure of brand names affects the way consumers evaluate products and their underlying attributes. The study reveals that consumers use information derived from the phonemes in brand names to infer the characteristics of products and evaluate brands. It is also emphasized that brand names' phonetic effects occur spontaneously and uncontrollably outside of awareness (Yorkston & Menon, 2004). Lowrey and Shrum (2007) investigated the effects of phonetic symbolism on brand name choice. Participants evaluated brand names in which vowel sounds differed by associating them with product attributes. When vowel sounds were consistent with product attributes, participants preferred brand names more favorably. However, vowel sounds with negative connotations were generally less preferred (Lowrey & Shrum, 2007). Abelin (2015) concluded that the effect of sound symbolism on the perception of words and brand names, in particular, overlaps with a cognitive framework. (Abelin, 2015)

To summarize, research on brand names has generally focused on front and back vowels, voiced and voiceless consonants, as well as fricatives and pauses. The meanings investigated are pretty diverse; they often include elements related to size, speed, weight, taste, and gender, many of which can be associated with frequency codes (Dieringer et al., 2011). Brand names shape consumer perception, reinforcing a product's identity and helping to achieve a competitive advantage. Linguistic methods and visual elements reinforce brand awareness by increasing memorability. Studies show that names that contain sound symbolism and meaning make consumers prefer that brand more often. In this context, proper management of the naming process is a crucial factor in developing a successful marketing strategy. And it requires further research.

1.2 IN THE PHARMACEUTICAL INDUSTRY

The brand name is one of the key elements that permanently defines a drugs identity and plays a vital role in building consumer loyalty. While price, packaging, or promotional strategies may change over time, the brand name remains constant throughout the product's life. Given increasing competition and expanding therapeutic areas, differentiation is crucial for successful positioning. Therefore, a strong and unique brand name helps your drug stand out from the competition and differentiate itself in the market.

Brand name creation in the pharmaceutical industry is critical to ensure that products not only meet the health needs of patients but also position them in the market and outperform the competition. This process is not only limited to developing creative and memorable names but also involves multidimensional elements such as comprehensive market analysis, target audience identification, and ensuring compliance with legal regulations. A good brand name plays an important role in prescribing the product by attracting the attention of healthcare professionals, as well as gaining the trust of patients and increasing their loyalty to the drug. In this context, decision support systems are becoming a critical tool in the development and selection of creative names using data analysis, algorithmic approaches, and pattern recognition capabilities. Integrating these systems facilitates the development of brand names not only as a creative process but also as a strategic decision-making process, thereby enabling

pharmaceutical companies to create innovative and unique brand names that are both in line with scientific and medical standards and in line with their marketing strategies. With the rapid increase in direct-to-consumer advertising activities in the pharmaceutical industry, branding and marketing have become increasingly important in creating the right expectations in the minds of consumers. Previous research shows that direct-to-consumer marketing effectively encourages consumers to ask their doctors about specific drug (Kaiser, 2019). A survey conducted by the Kaiser Family Foundation reported that 44% of patients who talked to their doctor about a drug they had seen advertised were prescribed that drug (Pires et al., 2015). These findings suggest that linguistic features in drug naming can have a decisive impact on market share by increasing consumer awareness. This is because these features can influence the adequate memorization and pronunciation of brand names by healthcare professionals and patients.

Cavaco et al. evaluated the compliance of pharmaceutical brand names in Portugal with current pharmaceutical regulations and language conventions; the results showed that 35.1% were orthographically incorrect, indicating that many names should be converted to a simpler and clearer form to improve readability because complex names lead to communication difficulties, especially for patients with low literacy.

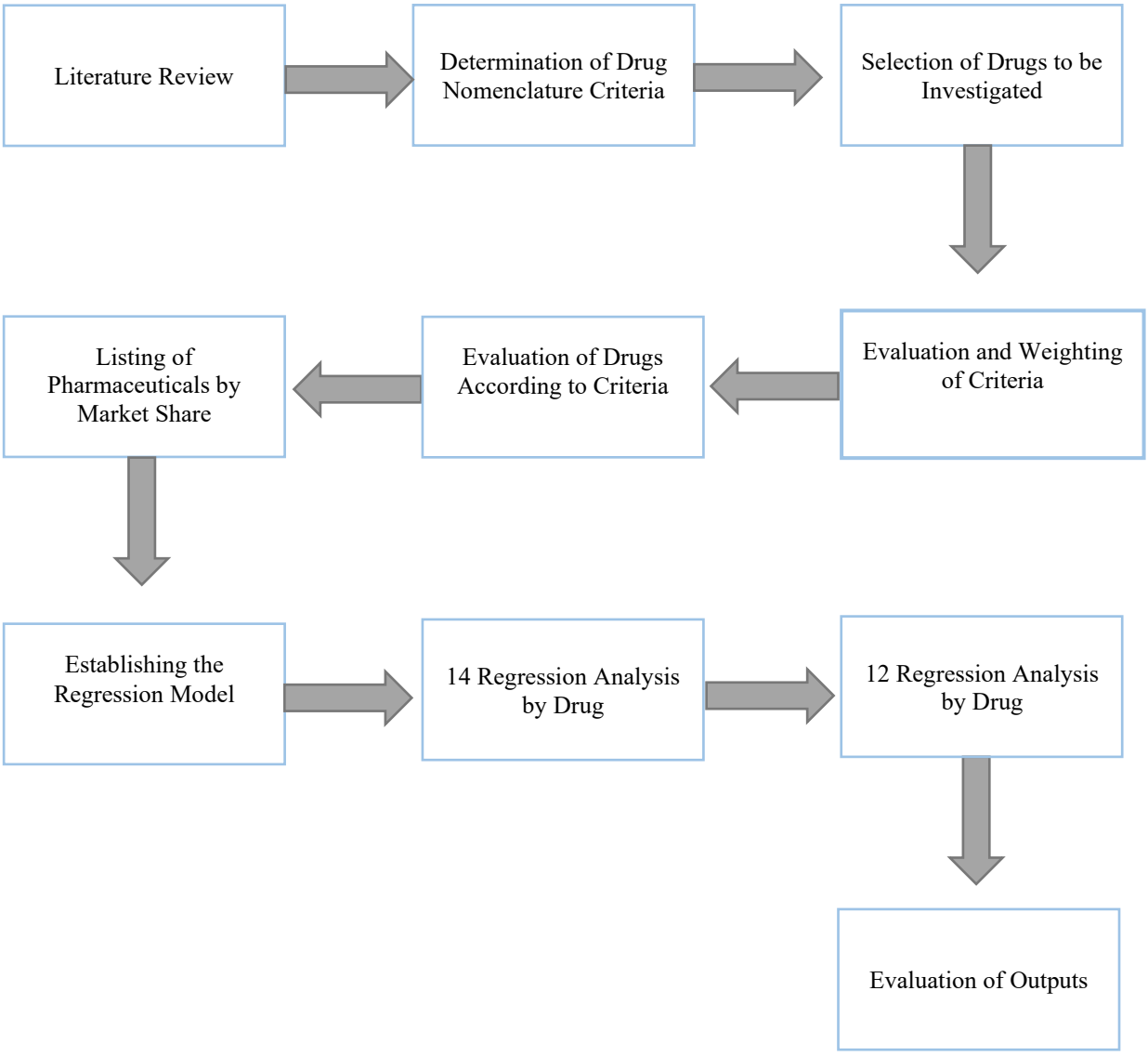
Gangwal and Gangwal (2011) explain the various criteria that pharmaceutical companies consider when determining brand names. Their research states that catchy and easy-to-pronounce names create a positive impression on consumers. He also emphasizes that the uniqueness of names ensures that they are not confused with other drug names. They present findings that marketing-effective and interesting names increase the market success of the product. They underline the importance of names that do not create negative associations with the target audience. Finally, the choice of specific letters (e.g., X, Z) is emphasized to make the product image dynamic and powerful.

In their study, Dohle and Siegrist (2014) state that the complexity of drug names has negative effects on drug buyers compared to fluent and simple names. Their research shows that complex drug names are perceived as more dangerous than simple names, which negatively affects willingness to buy. The findings suggest that the fluency of pharmaceutical drug names plays a critical role in predicting perceived danger, hypothesized side effects, and willingness to purchase

In their study, Park et al. (2021) reveal the mechanism explaining how vowels and consonants in drug brand names shape consumers' expectations of drug potency, duration of efficacy, and side effects. The findings show that sound symbolism directly influences these expectations and that vowel consonants (e.g., [v], [z], [b], [d]) play an important role in influencing a consumer's expectations about a drug's attributes and in guiding consumers' perceptions of the drug.

Daabes, ASA, and Ananzeh, M. (2022) emphasize that internal and external constraints play an important role in the pharmaceutical brand naming process. According to their research, external constraints include factors such as legal regulations, competitors, ethical criteria, and cultural requirements, while internal factors include the five main naming methods of the brand: chemical structure, generic characteristics, disease association, company-related elements, and invented names. A study of the Jordanian pharmaceutical industry found that generic names, company-related names, and disease indications are the most prominent techniques used in the brand naming process. These findings suggest that pharmaceutical branding strategies are shaped by global and local factors.

Figure 1. Flow of Study



This diagram visually summarizes a planned research process to analyze the impact of the criteria involved in the drug naming process on the market shares of drugs. The process starts with a literature review and proceeds through stages such as listing the drugs according to their market share, evaluating them according to the drug naming criteria, and performing regression analysis. Finally, the results are evaluated to determine the impact and importance of drug naming criteria on market share. In this way, pharmaceutical companies can better understand the market position of their products and shape their product naming strategies accordingly. The study attempts to explain the relationship between drug naming and market share with a mathematical model.

2. METHODOLOGY

2.1 Determination of Criteria

In the pharmaceutical brand naming process, the selection of an effective and successful name contributes significantly to both strengthening marketing strategies and shaping consumer perception. In this study, the criteria to be used in optimizing the pharmaceutical brand naming process were determined in the light of a comprehensive literature review and expert opinions in the sector. The criteria listed below have been identified as the most fundamental factors shaping the marketing success of pharmaceutical brands and have been taken into consideration in the research process.

2.1.1 Evoking the Active Ingredient

Drug names are determined based on a scheme of specific syllables (stems) that reflect the drug's chemical structure, effects, or indications. In addition, names should have a prefix that distinguishes them from other drugs, have a pleasant sound, are memorable, and can be approved by the sponsoring pharmaceutical company. Drug names are the product of complex negotiations to balance the needs and demands of multiple stakeholders, such as patients, pharmaceutical companies, doctors, pharmacists, and regulators. In this context, the choice of drug names that are evocative of the active ingredient is crucial for a proper promotion and marketing strategy (Karet, 2019). Therefore, the evocation of the active ingredient in the brand name has a direct impact on the success of the name. Developed in 1965 by Vladimir Levenshtein, the Levenshtein Distance Algorithm (LUA) has been used in many scientific fields since it was first introduced. This algorithm is based on the principle of determining the number of additions, subtractions, and rearrangements needed to transform two sequences into each other. (Aronson, 1995)

2.1.2 Authenticity

Confusion arising from similar drug names can lead to errors in prescribing or administering drugs (Aronson, 1995). The risk of such errors can be reduced by simple measures. Choosing an original and unique brand name both prevents confusion and increases brand recognizability. Unique names create awareness by allowing consumers to distinguish the drug from other products. Research shows that unique brand names increase the effectiveness of marketing strategies and avoid legal obstacles.

2.1.3 Shortness

A short and concise brand name is one of the most important factors that increase recall. Long and complex names may not stick in consumers' minds. Short names can also be more easily conveyed in voice communication, which provides a great advantage in advertising and marketing processes. The brevity of a brand name is a critical factor, especially for companies trying to expand into international markets. A study conducted in Kayseri province showed that memorability, easy pronunciation, easy spelling, and attractiveness are among the most important factors. These findings suggest that short and concise brand names are easily memorable in the minds of consumers and help the brand appeal to a wider audience. Moreover, a short brand name offers great advantages in both communication and marketing strategies. Instead of long and complex names, short and concise names are more easily remembered and preferred by consumers. In this context, short brand names stand out as an important strategic element that enables brands to succeed more in international trade. (Kuruşçu, 2017).

2.1.4 Ease of Pronunciation

Brand name choice is not only about meaningfulness and connotation; ease of pronunciation is also an important factor. Empirical studies have demonstrated the effects of relevance, connotation, and pronunciation of brand names on consumers' preferences. In particular, it has been observed that the contribution of connotation to brand preferences is reduced if the brand name is difficult to pronounce. These findings suggest that brand names should be meaningful and evocative and also names that consumers can easily pronounce, which play a decisive role in brand preferences and recall. Therefore, paying attention to ease of pronunciation in the brand naming process is critical to ensure that the brand is accepted by a wider audience in the market. (Bao et al., 2008)

2.1.5 Use of Strong Letters

The choice of letters plays a major role in creating an impressive and powerful perception of pharmaceutical brand names. Amit and Ankit Ganwal's (2011) study in India showed that letters such as "X," "Z," "C," and "D" provide phonologically stronger perceptions of brands, and these letters are often associated with superiority, reliability, and innovation. These letters are particularly effective in creating a strong and effective brand image in the pharmaceutical industry. The study reveals that successful brand names such as Nexium, Zithromax, and Clarinex are examples that support this strategy. The use of such letters in brand naming processes increases the competitiveness of brands by positively affecting consumer perception. (Gangwal & Gangwal, 2011)

2.1.6 Reliable and Effective

The efficacy and safety of drugs play a critical role in the choice of brand name. A good brand name instills trust in consumers and creates a positive perception of the quality of the product. In the literature, the perception of trustworthiness has been shown to have significant effects on consumer loyalty and market performance. (Chaudhuri & Holbrook, 2001)

2.1.7 Identification of Drugs

The 2020 analysis of the biosimilars market based on sales volumes reveals the annual sales volumes of the top 20 biosimilars and their percentage distribution in the market. This analysis shows that the top 5 antithrombotic drugs account for a total market share of 89.03% (9,489,245 boxes). This shows that antithrombotic drugs have the largest market share among biosimilars. Therefore, studying these drugs will be a critical step in understanding the overall dynamics of the biosimilar market.

Table 1. List of the Identified Drugs Used in the Study, Along with Their Active Ingredients and Therapeutic Categories, to Enhance Understanding of Their Medical Use and Branding Context.

Drug Name	Active Ingredient	Therapeutic Category
OKSAPAR PREF.SYR SC 60 MG 2×0.6 ML	Enoxaparin sodium	Anticoagulant (Low Molecular Weight Heparin)
ENOX PREF.SYR SC 60 MG 2×0.6 ML	Enoxaparin sodium	Anticoagulant
OKSAPAR PREF.SYR SC 40 MG 10×0.4 ML	Enoxaparin sodium	Anticoagulant
ENOX PREF.SYR SC 40 MG 10×0.4 ML	Enoxaparin sodium	Anticoagulant
AXEPARIN PREFIL.SYRIN 60 MG 2×0.6 ML	Enoxaparin sodium	Anticoagulant
AXEPARIN PREFIL.SYRIN 40 MG 10×0.4 ML	Enoxaparin sodium	Anticoagulant
GLARIN PEN SC 100 IU/1ML 5×3 ML	Insulin glargine	Antidiabetic (Long-acting insulin)
FRAVEN PREF.SYRIN 30 M 5×0.5 ML	Filgrastim	Hematopoietic (G-CSF)
REMSIMA V.IV DRY 100 MG 1	Infliximab	Immunosuppressant (TNF inhibitor)
OMNITROPE CARTRIDGES 10 MG 1×1.5 ML	Somatropin	Growth Hormone
BASAGLAR KWIKPEN 100 IU 6×3 ML	Insulin glargine	Antidiabetic
LEUCOSTIM PREFIL.SYRIN 30 M 1×1 ML	Filgrastim	Hematopoietic (G-CSF)
LEUCOSTIM PREFIL.SYRIN 30 M 5×1 ML	Filgrastim	Hematopoietic (G-CSF)
EPORON PREFIL.SYRIN 4000 IU 6×0.4 ML	Epoetin alfa	Erythropoiesis-stimulating agent
EPORON PREFIL.SYRIN 4000 IU 5×0.4 ML	Epoetin alfa	Erythropoiesis-stimulating agent
TEVAGRASTIM PREFIL.SYRIN 48 M 5×0.8 ML	Filgrastim	Hematopoietic (G-CSF)
DROPOETIN PREFIL.SYRIN 4000 IU 6×0.4 ML	Epoetin alfa	Erythropoiesis-stimulating agent
DROPOETIN PREFIL.SYRIN 3000 IU 6×0.3 ML	Epoetin alfa	Erythropoiesis-stimulating agent
BINOCRIT PREF. SYR 4000 IU 6×0.4 ML	Epoetin alfa	Erythropoiesis-stimulating agent
EPOBEL PREFIL.SYRIN 5000 IU 6×0.5 ML	Epoetin beta	Erythropoiesis-stimulating agent

Database: IQVIA

2.1.8 Method Selection for Analysis

In this study, regression analysis is applied to optimize decision-making processes involving multiple factors, such as the pharmaceutical industry and brand name selection. Regression analysis is an effective statistical method to examine the relationships between dependent and independent variables. Regression analysis has the capacity to predict future trends based on past data. In the pharmaceutical industry, predicting future brand preferences and sales potential is critical for decision-makers. By predicting the future success of different brand names, the regression model enables more informed strategic decisions to be made. In a highly competitive and strategically important area such as the

pharmaceutical industry, decisions need to be supported not only by intuition but also by solid data. Regression analysis brings a scientific approach to the decision-making process by providing the most reliable results in the light of available data. The pharmaceutical industry and brand name selection involve many complex and interacting factors. Regression analysis models these complex relationships, allowing us to understand how multiple variables work together. In particular, regression analysis is useful for answering questions such as how different marketing factors affect the target audience.

General Formulation of the Multiple Linear Regression Model: A multiple linear regression model is employed to analyze the influence of several independent variables on one dependent variable. This model operates under the assumption that the dependent variable (y) is linearly related to the multiple independent variables. Multiple linear regression is frequently favored for exploring interactions within more complex data sets.

General Formulation of the Multiple Linear Regression Model:

$$y = \beta 0 + \beta 1 * x1 + \beta 2 * x2 + \ldots + \beta n * xn + \varepsilon$$

- y: Dependent variable (the variable to be predicted). This is the output or outcome that the model is targeting.
- x_1, x_2, ..., xn: Independent variables (inputs or predictors). These variables are factors that influence dependent variables. The number of these factors can be n.
- β_0: Constant term (intercept). It represents the value of the dependent variable when all independent variables are zero. This sets the starting point in the linear equation of the model.
- β_1, β_2, ..., βn: Regression coefficients. It shows the effect of each independent variable on the dependent variable. For example, β_1 represents the effect of x_1 on the dependent variable, and β_2 represents the effect of x_2.
- ε: Error term (residual). It is the part of the model that cannot explain all the variation in the data set. It contains the differences from the true value to the predicted value and is generally considered to be randomly distributed.

3. APPLICATION

3.1 Determination of Criteria

A detailed literature review was conducted to determine the criteria. In this process, previous studies, experiments, and theoretical frameworks on the subject were examined, and the criteria that were highlighted and generally accepted by expert researchers in the field were determined. In this way, the aim was to make the results of the study comparable and generalizable with previous studies. The criteria identified as a result of the literature review are organized in a table in order to present them in a more understandable and visual way.

Table 2. Criteria

Criteria	Definition	Literature	Method
Evoking the Active Ingredient	The name is related to the active substance	Karet, (2019)	Distance to Levenshtein
Authenticity	Uniqueness	Aronson, 1995	Survey Study
Shortness	Low number of letters	Kuruşçu, 2017	Scoring System
Ease of Pronunciation	Easily pronounceable	Bao et al., 2008	Survey Study
Recall ability	Catchy and memorable	Petty, 2012	Survey Study
Use of Strong Letters	Strong letters in the brand name (X, Z, C, D)	Gangwal & Gangwal, 2011	Scoring System
Reliable and Effective	Creating a sense of trust in the consumer	Chaudhuri, & Holbrook, 2001	Survey Study

3.2 Evaluation and Weighting of Criteria

This phase of the study was conducted to determine the importance of various criteria that should be considered in the creation of new drug names. For this purpose, data was collected from five brand experts experienced in the pharmaceutical industry. The experts were asked to rate the seven criteria on a scale of 1 to 5 (1: Least important, 5: Most important). The collected data were analyzed, and the average score and normalization value of each criterion were calculated.

Table 3. Criteria Weights

Criteria	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Average	Normalization
Authenticity	5	4	4	3	4	4,00	0,16
Shortness	3	3	4	4	3	3,40	0,14
Ease of Pronunciation	5	4	4	5	4	4,40	0,18
Recall ability	5	5	3	5	5	4,60	0,18
Use of Strong Letters	2	2	3	5	4	3,20	0,13
Evoking the Active Ingredient	2	1	2	2	2	1,80	0,07
Reliable and Effective	3	4	3	5	3	3,60	0,14

3.3 Evaluation of Drugs According to Criteria

3.3.1 Evoking the Active Ingredient:

At this stage of the study, the Levenshtein distance method was used to assess the level of association between drug names and their active ingredients. The results obtained with Levenshtein distance reflect the similarity between each drug name and the related active ingredient. The table below shows the distances, normalized values, and scores based on these values for the drug names analyzed and the related active ingredients:

Table 4. Item Evocation Criteria Score

Drug Name	Active Ingredient	Levenshtein Distance	Normalized Distance	Score
OKSAPAR	Enoxaparin	5	0.56	3
ENOX	Enoxaparin	7	0.77	2
AXEPARIN	Enoxaparin	3	0.33	4
GLARIN PEN	Dexamethasone	10	0.83	2
FRAVEN	Fondaparinuks	4	0.40	4
REMSIMA	Infliximab	5	0.50	3
OMNITROPE	Somatropin	4	0.44	3
BASAGLAR	Insulin glargin	7	0.58	3
LEUCOSTIM	Filgrastim	3	0.30	4
EPORON	Epoetin alfa	6	0.60	3
TEVAGRASTIM	Filgrastim	5	0.42	3
DROPOETIN	Epoetin alfa	5	0.50	3
BINOCRIT	Epoetin alfa	7	0.77	2
EPOBEL	Epoetin beta	5	0.56	3

The scores in the table are ranked from 1 to 5 based on normalized distances. The similarity levels between drug names and active ingredients are ranked as follows:

- High Similarity (Score 4-5): AXEPARIN, FRAVEN, OMNITROPE, LEUCOSTIM, TEVAGRASTIM. These drug names have a strong association in terms of evoking their active ingredients.
- Moderate Similarity (Score 3): OKSAPAR, REMSIMA, BASAGLAR, EPORON, DROPOETIN, EPOBEL. The names of the drug in this group partially resemble their active ingredients.
- Low Similarity (Score 2): ENOX, GLARIN PEN, BINOCRIT. These drug names are only marginally related to the active substance.

3.3.2 Use of Strong Letters X, Z, C, D

The evaluation of the use of strong letters (X, Z, C, D) in drug names is presented in the table below. Each name was scored on a 5-point scale, taking into account the presence of strong letters and the degree of emphasis of these letters in the name. (In Turkish, the letter X is pronounced as "ks" and therefore received an OKSAPAR score of 3.

Table 5. Strong Letters Score

Drug Name	Strong Letter	Description	Score
OKSAPAR	X	It contains one strong letter and is prominently featured in the name.	3
ENOX	X	It contains one strong letter and is clearly felt in the name.	3
AXEPARIN	X	It contains a single strong letter, but the effect is limited because the name is long.	3
GLARIN	No	No strong letters.	1
FRAGEN	No	No strong letters.	1
REMSIMA	No	No strong letters.	1
OMNITROPE	No	No strong letters.	1
BASAGLAR	No	No strong letters.	1
LEUCOSTIM	C	It contains a single strong letter but has a low degree of emphasis.	2
EPORON	No	No strong letters.	1
TEVAGRASTIM	C	It contains a single strong letter but has limited salience within the name.	2
DROPOETIN	D	It contains one strong letter and stands out by being at the beginning of the name.	3
BINOCRIT	C	It contains one strong letter and is prominently featured in the name.	3
EPOBEL	No	No strong letters.	1

3.3.3 Shortness

In this analysis, the evaluation and scoring of drug names according to the shortness criterion were carried out in the following steps:

Steps

Selection of Drug Names and Calculation of their Length: First, 14 different drug names were selected for analysis. Each of these names was named. Thus, the number of characters in each drug name was determined. This calculation was an indicator of whether the drug was short or long.

Normalization: In order to compare the differences between name lengths, the length of each drug name was subjected to a normalization process. This was done to convert the length of each name to a value between 0 and 1 based on the lengths of the shortest and longest names. This was done as follows:

Normalization = (Length of Name - Min Length) / (Max Length - Min Length)

Where "Max Length" is the length of the longest name and "Min Length" is the length of the shortest name. The normalization process ensured that the lengths of all names were comparable to each other.

Scoring (5-point scoring system): Each drug name was given a score out of 5 according to the value obtained as a result of normalization. The 5-point score corresponding to the normalization value was calculated as follows:

$Score = 5 - (Normalization\ Value \times 5)$

This formula ensured that drug names with higher conformity to the shortness criterion were given higher scores. Drugs with a normalization value close to 0 (i.e., shorter) received the maximum score (5), while drugs with a normalization value close to 1 (i.e., longer) received the minimum score (0).

3.3.4 Survey Study

This survey brought together the views of individuals of different ages and educational and professional backgrounds, enabling a more balanced and inclusive evaluation of the drug naming process. In

particular, the predominance of the opinions of young and educated individuals supported the identification of names in line with current market trends and consumer expectations.

Table 6. Ages

17 and below	6
18-25	171
26-35	5
36-45	3
46 and above	2
General Total	**187**

When the distribution of the participants according to age groups is analyzed, it is seen that the majority of the participants are between the ages of 18-25 (91.4%). The fact that this group is more represented than other age groups shows that the opinions of young adults are predominantly taken into account in the drug naming process.

Table 7. Degrees of Education

PhD	1
Bachelor's / Associate's Degree	165
High School	16
Master's Degree	5
General Total	**187**

In the evaluation by educational level, it is noteworthy that most of the respondents are bachelor's/ associate's degree graduates (88.2%). This shows that the individuals who participated in the survey were generally selected from a group with a high level of education.

Table 8. Occupations

I use it as a patient	74
I am not interested	54
I am a health worker (Medical field)	59
General Total	**187**

Data on occupational status revealed that 39.6% of the participants were directly involved with drugs, either as healthcare professionals or as patients. The participation of healthcare professionals (31.6%), in particular, provided important input on the technical aspects of the drug naming process. The 28.9% who expressed a lack of interest represent a more general consumer group.

3.3.5 Authenticity

In the questionnaire study, drug names were evaluated in terms of authenticity, and participants were asked to rate how authentic these names were on a scale of 1 to 5. The results reveal differences in the perception of authenticity of drug names.

Table 9. Originality Criteria Score

DRUGS	AUTHENTICITY
OKSAPAR	3,209
ENOX	2,941
AXEPARIN	1,765
GLARIN PEN	3,904
FRAGEN	3,155
REMSIMA	4,037
OMNITROPE	3,743
BASAGLAR	4,144
LEUCOSTIM	3,583
EPORON	2,861
TEVAGRASTIM	3,930
DROPOETIN	3,235
BINOCRIT	3,155
EPOBEL	3,414

- **Highest Originality Score:**

BASAGLAR (4,144) received the highest score for uniqueness. This suggests that respondents found this name more distinct and unique than other drug names. The high score of BASAGLAR may be related to both the ease of pronunciation and the fact that the name is not similar to other names in the market.

- **Other Highly Rated Drugs:**

REMSIMA (4.037) was another drug that stood out in terms of uniqueness. Participants stated that this name also left a unique impression.

The names TEVAGRASTIM (3,930) and OMNITROPE (3,743) also scored high in the perception of originality, supporting the perception of uniqueness.

- **Drugs with Moderate Specificity Scores:**

The names LEUCOSTIM (3.583) and GLARIN PEN (3.904) have moderate authenticity scores. Although the names of these drugs are found to be satisfactory in terms of authenticity perception, it can be considered that they may be confused with similar names in the market.

- **Drugs with Lower Specificity Scores:**

AXEPARIN (1,765) received the lowest score for specificity. This suggests that respondents found this name more generic or easily confused with other drug names.

Drug names such as ENOX (2,941) and EPORON (2,861) also received lower uniqueness scores. This suggests that names were found to be less effective in terms of uniqueness.

The survey results show that there are significant differences between drug names in terms of originality. Originality is an important criterion both to ensure that drug names are not confused with other drugs and to create a distinctive effect in consumer perception. In this context, names such as BASAGLAR and REMSIMA stand out with their high originality, while names such as AXEPARIN and ENOX may need to be improved or re-evaluated.

3.3.6 Recall ability

Recallability determines how easily drug names can be remembered by users and whether they are memorable. Recallability of drug names is an important part of the branding process and consumer perception. According to the survey results, it is observed that drug names are rated in a wide range in terms of memorability.

Table 10. Memorability Criteria Score

DRUGS	Recall ability
OKSAPAR	2,701
ENOX	2,898
AXEPARIN	2,519
GLARIN PEN	2,150
FRAGEN	2,681
REMSIMA	2,227
OMNITROPE	1,888
BASAGLAR	2,316
LEUCOSTIM	1,871
EPORON	2,780
TEVAGRASTIM	1,914
DROPOETIN	2,027
BINOCRIT	2,412
EPOBEL	2,604

Drugs with the Highest Recall Score:

- ENOX (2,898): It received the highest score for memorability. This indicates that users can easily remember the name ENOX. Since it is short, simple, and memorable, the name can easily stick in the minds of users.
- EPORON (2,780): This name also scored very high in terms of memorability. Similarly, the fact that it is a short and meaningful name makes it more likely to leave a lasting impression in the minds of users.
- OKSAPAR (2,701) and FRAVEN (2,681): These drug names are also strong in terms of recall. Both have a score above the medium level, and it can be said that the names have a significant impact on users.

Drugs with a Moderate Recall Score:

- BINOCRIT (2,412) and EPOBEL (2,604): These drug names show moderate memorability. Although the names are memorable, they may not have had as strong an impact as other names. However, their recall can be improved through marketing strategies.
- BASAGLAR (2,316): BASAGLAR also has an average score for memorability. While this name can make a strong enough impression in the market, it may need additional strategies to improve its memorability.

Drugs with Lower Recall Scores:

- OMNITROPE (1,888) and LEUCOSTIM (1,871): These drugs scored low for memorability, suggesting that there may be difficulties with retention. The length or complexity of the names may make it difficult for users to remember them.
- GLARIN PEN (2,150) and REMSIMA (2,227): These names also scored low in terms of recall. This means that these drugs may not be as prominent in the market as other names and may not easily stick in users' minds.

3.3.7 Ease of Pronunciation

Ease of pronunciation refers to the ease and accuracy with which drug names can be pronounced by users. A good drug name is a great advantage in terms of dissemination and adoption, especially in the international market. Easy-to-pronounce names help consumers to pronounce them correctly and remember them more.

Table 11. Ease of Pronunciation Criteria Score

DRUGS	Ease of Pronunciation
OKSAPAR	4,021
ENOX	4,273
AXEPARIN	3,561
GLARIN PEN	3,658
FRAGEN	3,957
REMSIMA	3,781
OMNITROPE	2,652
BASAGLAR	3,262
LEUCOSTIM	2,465
EPORON	3,774
TEVAGRASTIM	2,492
DROPOETIN	2,683
BINOCRIT	3,262
EPOBEL	3,807

Drugs with the Highest Ease of Pronunciation:

- ENOX (4,273): Scored the highest for ease of pronunciation. This short and simple name can be easily pronounced by most users. The ease of pronunciation makes it easy for users to remember and adopt this drugs. Such names offer a strong marketing advantage.
- OKSAPAR (4,021): OKSAPAR is also a name with high ease of pronunciation. Both the harmony of the vowels and the simplicity of the syllable structure make this name easy to pronounce.
- FRAVEN (3,957): Another name that performs quite well in terms of ease of pronunciation. It is short and has a strong vowel harmony, making it easy to say and remember.
- REMSIMA (3,781) and EPORON (3,774): These drug names are also easy to pronounce and above average. The syllable structures and vowel sequences of the names make them easy to pronounce.

Drugs with Moderate Ease of Pronunciation:

- AXEPARIN (3,561): AXEPARIN received a medium score for pronunciation. Although the name can be pronounced easily, the combination of several different syllables may be difficult for some users.
- GLARIN PEN (3,658): This name also has an average score for pronunciation. However, the name "GLARIN PEN" may be a little more difficult to pronounce, especially for English speakers.
- BINOCRIT (3,262) and BASAGLAR (3,262): These drugs have an average score for ease of pronunciation and are usually pronounced correctly, although some complexities in length and syllable structure can make them difficult to pronounce.
- EPOBEL (3,807): It has a good score for ease of pronunciation but not quite as high as the most easily pronounced nouns.

Drugs with Lower Ease of Pronunciation:

- OMNITROPE (2,652): OMNITROPE received a low score for pronunciation. Its length and complex syllable structure can make it difficult for users to pronounce it correctly.
- LEUCOSTIM (2,465): Similarly, the name LEUCOSTIM received a low score for pronunciation. This name can create pronunciation difficulties, especially in different languages.
- TEVAGRASTIM (2,492): This is another name with a lower ease of pronunciation. Its long and complex structure can cause difficulty in pronunciation.
- DROPOETIN (2,683): DROPOETIN has a slightly lower score for pronunciation. The combination of syllables in the name may be difficult for some users.

3.3.8 Reliable and Effective

Reliability and efficacy indicate the extent to which users and healthcare professionals consider drug names effective and reliable. A good drug name should inspire trust and leave a positive impression of the effectiveness of the treatment process. According to the survey results, the evaluation of drug names in terms of reliability and effectiveness provides an important indicator for brands' strategies to increase their credibility.

Table 12. Reliability and Effectiveness Criteria Score

DRUGS	Reliable and Effective
OKSAPAR	3,414
ENOX	3,486
AXEPARIN	3,546
GLARIN PEN	3,000
FRAGEN	3,156
REMSIMA	3,043
OMNITROPE	2,930
BASAGLAR	2,636
LEUCOSTIM	3,048
EPORON	3,215
TEVAGRASTIM	2,898
DROPOETIN	3,151
BINOCRIT	3,161
EPOBEL	3,183

Drugs with the Highest Safety and Efficacy Scores:

- AXEPARIN (3,546): Scored highest for safety and efficacy. Participants indicated that this name left a strong impression that the drugs were safe and effective. It is a very important name in terms of an effective treatment process and reliability.
- ENOX (3,486): ENOX has a high score for trustworthiness. Respondents also rated this name as trustworthy and effective. This indicates that the drug is in a strong position in terms of effectiveness and users' perception of trust.
- EPORON (3,215) and BINOCRIT (3,161): These drug names also scored very well for safety and efficacy. These names have the effect of building trust between health professionals and users.

Drugs with Moderate Safety and Efficacy Scores:

- OKSAPAR (3,414): The name Oksapar has a high score in terms of trustworthiness, but a lower score compared to other names. However, it still creates a sufficient feeling of trust.
- FRAVEN (3,156) and DROPOETIN (3,151): These drugs also scored in the middle range for trustworthiness. Participants found these names to be safe and effective but had a slightly lower perception of trust compared to other drugs.
- REMSIMA (3,043) and LEUCOSTIM (3,048): These drug names may also have created an average sense of safety and efficacy, adequate in terms of trust, but with a slightly lower impact than their competitors.

Drugs with Lower Safety and Efficacy Scores:

- GLARIN PEN (3,000): This drug name scored the lowest in terms of trustworthiness but was still considered highly trustworthy by participants. However, the name could be improved to inspire stronger trust.
- OMNITROPE (2,930) and BASAGLAR (2,636): These drug names scored lower in terms of trustworthiness and may require improvement in the sense of trust.
- TEVAGRASTIM (2,898): This name has a low score for trustworthiness and maybe a name that needs work to create the impression of being effective and trustworthy.

4. LISTING OF DRUGS BY MARKET SHARE

In this study, the total sales volume (in boxes) and the percentages of this sales volume in the total market were used to determine the market shares of pharmaceuticals. Data were obtained from the Turkish Pharmaceutical Market Monitoring Report - 8 published by the Ministry of Health. Market shares were calculated by dividing the total sales volume of each drug by the total sales volume of all drugs**.**

The determination of market shares constituted a basic data set for analyzing the impact of brand characteristics of pharmaceuticals on the market. In order to examine the effects of drugs with high market share on the model, two different models were created, one excluding and one including these drugs in the analysis process. This method allowed for a clearer understanding of the significance level of the model and the effects of the independent variables on sales.

Table 13. Annual Sales Volumes of the Top 20 Biosimilar Drugs and Their Percentage Distribution in the Biosimilar Drugs Market According to Sales Volumes in 2020

Drug Name	Total Sales Volume (Boxes)	Total Market Share (%)
OKSAPAR	5.810.249	54,51
ENOX	3.435.156	32,23
AXEPARIN	687.330	3,06
GLARIN	181.259	1,7
FRAGEN	133.727	1,25
REMSIMA	91.654	0,86
OMNITROPE	80.150	0,75
BASAGLAR	79.984	0,75
LEUCOSTIM	93.030	0,88
EPORON	72.049	0,67
TEVAGRASTIM	48.000	0,45
DROPOETIN	71.287	0,67
BINOCRIT	31.971	0,3
EPOBEL	28.415	0,27

Source: Turkish Pharmaceutical Market Monitoring Report - 8, Ministry of Health (2020).

5. FINDINGS

Establishing the Regression Model

The dependent variable used in the study is the market share of the relevant pharmaceuticals calculated over the total sales volume. Multiple linear regression analysis was performed to investigate the relationship between the dependent variable and the independent variables based on the previously mentioned criteria. The analysis aims to assess the explainability of the dependent variable by the independent variables and the impact of these variables.

The general form of the regression model is expressed as follows:

Market Share = $\beta_0 + \beta_1 * Recall + \beta_2 * Ease\ of\ Pronunciation + \beta_3 * Credibility + \ldots + \varepsilon$

Market Share Market Share of the Brand

β_0 = Constant term

βn = regression coefficient of n independent variables

ε = Error term

In this study, two separate regression analyses were conducted to examine the effects of brand name characteristics on the market success of pharmaceutical products. The first model included data from 14 drugs, providing a general evaluation, while the second model focused on 12 drugs for comparison. The transition from 14 to 12 drugs revealed that certain products with disproportionately high market shares negatively impacted the statistical significance of the overall model.

Results of Regression Analysis with 14 Drugs:

The initial regression model yielded an R-squared value of 0.637, indicating that approximately 63.7% of the variance in marketing performance (dependent variable) could be explained by the independent variables. However, the adjusted R-squared value was significantly lower at 0.214, suggesting limited explanatory power. The ANOVA results further supported this interpretation, with an F-value of 1.507 and a p-value of 0.3167, indicating that the model lacked statistical significance overall. These results

imply that the inclusion of drugs with dominant market shares may have skewed the analysis, reducing the overall reliability of the model.

An examination of the regression coefficients showed that while variables such as Memorability and Ease of Pronunciation had positive coefficients, their effects were not statistically significant ($p > 0.05$). Similarly, variables like Trustworthiness and Effectiveness displayed negative coefficients, also lacking statistical significance. Other factors, including Originality, Active Ingredient Resemblance, and Use of Strong Letters, also failed to show significant impact on marketing performance.

Due to the limited explanatory power and poor significance of the first model, a revised regression analysis was conducted to enhance the clarity and accuracy of results**.** Two outlier drugs—**Oxapar** and **Enox**—were removed from the model because their market shares were disproportionately high compared to the others. Their presence was distorting the model and masking the true influence of brand name characteristics. By excluding these two drugs, the resulting 12-drug model provided a more balanced and statistically reliable foundation for analysis.

Results of Regression Analysis with 12 Drugs:

The second regression analysis—conducted using a dataset of 12 drugs—offered more robust and meaningful insights. The R-squared value of this model was 0.957, indicating that 95.7% of the variation in marketing performance could be explained by the brand name features. The results clearly demonstrated that Memorability, Ease of Pronunciation, Trustworthiness, and Effectiveness had statistically significant positive effects on brand success. Specifically, Memorability ($p = 0.00495$) and Ease of Pronunciation ($p = 0.00335$) emerged as strong predictors of brand performance, highlighting their critical role in consumer preference and sales outcomes. Similarly, the variable representing Trust and Effect was also significant ($p = 0.01552$), emphasizing the importance of building confidence through brand naming.

On the other hand, Brevity and Use of Strong Letters did not have significant effects in this model, suggesting that these features may have a limited impact on brand performance. Moreover, Active Ingredient Resemblance showed a weak relationship with the dependent variable, indicating that this characteristic may not play a decisive role in consumer preferences.

Overall, the comparison of both models demonstrates that statistical significance and explanatory power are highly sensitive to the inclusion of drugs with extremely high market shares. The removal of such outliers in the second model resulted in a more valid and interpretable regression analysis. The final ANOVA results, with a p-value of 0.01319, confirm the overall significance of the 12-drug model.

6. DISCUSSION

This study examined the impact of linguistic and structural criteria used in pharmaceutical brand naming on market share, highlighting that the naming of a drug brand is not only an aesthetic but also a strategic decision. Regression analyses revealed that brand names with specific phonetic and semantic characteristics tend to have higher market shares. These findings align with previous research in several respects and offer original contributions in others.

Lowrey and Shrum (2007) emphasized that sound symbolism plays a significant role in consumers' brand name preferences, noting that phonemes consistent with product attributes positively influence consumer perception. Similarly, in this study, brand names that included voiced consonants (e.g., [b], [d], [v], [z]) were observed to have higher market shares. This supports the findings of Park et al. (2021), who showed that such phonemes create positive expectations about a drug's efficacy and trustworthiness.

Dohle and Siegrist (2014) found that drug names with simpler and more fluent structures reduce the perceived risk associated with medications and increase the willingness to purchase. In the present study, short and easy-to-pronounce brand names also appeared to be linked with greater market success. This effect is particularly relevant for elderly consumers or patients with low health literacy, as such names enhance accessibility and influence preference.

On the other hand, Daabes and Ananzeh (2022) highlighted the role of internal (e.g., chemical structure, disease association) and external (e.g., regulatory, cultural) constraints in the naming process. In this study, brand names associated with diseases were observed to be somewhat more preferred, although this effect was not as strong as the influence of phonetic features. This suggests that sound symbolism has a more direct impact on consumer psychology.

Gangwal and Gangwal (2011) emphasized that uniqueness and pronounceability reduce brand confusion and improve visibility in the market. Similarly, this study found that drug names resembling other existing names had lower market shares, indicating that potential confusion undermines consumer confidence. This finding also aligns with Aronson's (1995) research, which highlighted medication errors caused by similarities between drug names.

Finally, a methodological contribution of this study is its development of a mathematical model that evaluates the relationship between brand naming and market share based on multiple criteria. In doing so, it moves beyond previous studies that often remained theoretical or qualitative, offering a data-driven approach that supports decision-making systems. This reinforces the notion that pharmaceutical brand naming should be guided by analytics and strategic thinking, rather than intuition alone.

7. CONCLUSION

This study includes an evaluation process based on regression analyses and a theoretical framework to examine the effects of brand names on marketing success in the pharmaceutical industry. The aim of the study is to understand the effects of brand name characteristics on marketing performance and to make recommendations on pharmaceutical brand naming processes. In this context, the literature review, data collection process, analysis stages, and interpretation of the findings are carefully discussed.

In the first stage, brand name attributes were identified, and their relationship with marketing success was analyzed. Factors such as recallability, ease of pronunciation, trustworthiness, and influence were found to play an important role in marketing success. In particular, the factors of Memorability and Ease of Pronunciation are statistically significant, emphasizing the strong effects of these attributes on brand preference and consumer perception. The memorable and easy pronounceability of brands are found to be factors that directly affect the brand choice of consumers. In addition, the factors of trustworthiness and influence have also been found to make a significant contribution to marketing success, especially trust building, which plays a decisive role in consumer behavior. However, factors such as Brevity and the Use of Strong Letters did not have a significant impact on marketing success. This suggests that the role of these factors in brand effectiveness is limited and that marketing strategies cannot be shaped based on these factors alone. Furthermore, the low level of association with the Evocation of Active Ingredient factor suggests that the names of pharmaceutical brands that evoke active ingredients do not have the expected effect on consumer preferences. This finding reveals that evoking the active ingredient of the brand may not always be an effective strategy in the brand naming process in the pharmaceutical industry. Another important finding of the study is that the presence of drugs with high market share in the model may negatively affect the accuracy and generalizability of the model. In particular, the large market shares of drugs such as Oksapar and Enox weakened the relationship with the independent variables in the model and reduced the overall significance level. The large market shares of these drugs complicated the effect of the variables in the model and limited its accuracy. This finding suggests that drugs with high market shares should be handled with caution in the analyses and that a different evaluation of these drugs may lead to healthier results.

In the second stage of the analysis, a higher reliability and explanatory power were obtained in the model in which drugs with high market share were excluded. The R Square value of this model was 0.957, and the Adjusted R Square value was 0.883. This shows that the independent variables strongly explain the impact of the independent variables on marketing success. Furthermore, the overall significance of the model was supported by the ANOVA results ($p = 0.01319$), suggesting that the model has a strong statistical basis. The results of the study emphasize that factors such as Recallability and Ease of Pronunciation are of great importance in the marketing success of pharmaceutical brands. Future studies could examine in more detail how these factors vary across different pharmaceutical categories and market segments. Moreover, a more in-depth investigation of the relationship between brand name and market share may contribute to strategic branding decisions in the industry. In particular, it was

concluded that drugs with high market share should be excluded from the analysis or evaluated separately.

This study provides an important guide for the development of brand strategies in the pharmaceutical industry. The critical importance of Memorability**,** Ease of Pronunciation, and Credibility in pharmaceutical brand name selection stands out as the key to success in the marketing processes of brands. These findings will help to manage brand name selection processes more effectively and provide important contributions to the development of marketing strategies for the pharmaceutical industry.

As a result, the effects of the brand naming process on marketing success in the pharmaceutical industry need to be analyzed in more depth. Future studies, especially those examining the dynamics between market share and brand name characteristics in more detail, would be an important step toward improving the success of branding strategies in the pharmaceutical industry. This study provides an important foundation for researchers and practitioners interested in understanding and improving branding processes.

DECLARATION OF THE AUTHORS

Declaration of Contribution Rate: Beyza Özkan %35, M. Berk Çetin %25, Yavuz Özdemir %20, Mustafa Yıldırım %20
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