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Analysis of the Relationship between Brand Management and International Expansion of Franchise Companies Using Big Data

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Abstract

In today's globalized economy, franchise companies are strategically preparing to expand beyond domestic markets into international markets. When expanding overseas, it is crucial that the brand identity of a franchise company is well established. Through marketing activities, the brand's value must be enhanced to build a positive image of the brand, and all these activities are referred to as brand management. This study aimed to analyze the relationship between brand management and international expansion, utilizing big data analysis techniques with Textom. A total of 31,564 pieces of data were collected for the period from January 1, 2024, to May 1, 2024, and analyzed after undergoing a refinement process. The analysis results showed that brand management is an essential element in the strategic process of international expansion, and subsequent studies should focus on qualitative research

Keywords: "Franchise" "Brand-Management" "International-Expansion" "Big-Data"

1. INTRODUCTION

In today's globalized economy, franchise companies are increasingly pursuing global expansion to enter new markets and seize growth opportunities. Domestic food service companies have also undergone a 20-year growth period and have now reached a saturation point. They hope to expand beyond the domestic market,

with many companies already actively exporting their brands overseas [2]. According to KOTRA Overseas Market News, Southeast Asian countries, particularly Malaysia, are experiencing continued economic growth. The sustained popularity of the Korean wave, such as K-POP and K-FOOD, has fostered a sense of familiarity with Korean brands, prompting franchise companies to eagerly seek international expansion opportunities. Therefore, this study aims to examine the relationship between brand management—such as maintaining brand identity, localization strategies, and utilizing social media—and the international expansion of franchise companies, and to propose corresponding entry strategies.

The International Franchise Association (IFA) defines franchising as a method of business expansion and distribution of goods and services through a licensing relationship. In a franchise, the franchisor (an individual or company granting a license to a third party to operate a business under the franchisor's trademark) not only specifies the goods and services to be provided to the franchisee (those who purchase the license) but also provides the operating system, brand, and support.

According to Philip Kotler (2016), brand management is a series of processes that create, maintain, and enhance brand value and reputation in the market through consistent and strategic marketing activities. Lee Bong-hoon and two others (2016) state that the proper establishment of brand identity forms a positive brand image, ultimately increasing the brand's equity, or the company's value[1]. This is why brand management and the associated activities are necessary. A well-managed brand increases in value and can even achieve brand admiration.

2. METHOD

2.1 Research Subjects

This study selected Naver and Daum, including blogs, news, cafes, websites, and Knowledge In, as data collection channels. The selected content comprises related search terms for "overseas expansion" and "brand management." The reason for this selection is to maximize data collection by adopting keywords most closely related to this study. After collecting each keyword through text mining, data was estimated and refined through analysis. The data collection period is from January 1, 2024, to May 1, 2024, and the keywords are limited to 50.

2.2 Analysis Tools

This study utilized text mining and semantic network analysis. Text mining is the process and technique of summarizing large volumes of text data to achieve specific user objectives. Text processing techniques are used in various fields to structure documents. These structured documents are then analyzed to gain new insights for solving individual problems. Semantic network analysis is a method that analyzes the meaning of words through the structural relationships of components within a message. This facilitates organizational analysis by visualizing the interrelationships between individual nodes and showing which nodes form the discourse [3].

Furthermore, this study followed the two refinement procedures proposed by Lee Jeong-hak et al. (2019). First, during the refinement process, words connected to key terms were reviewed to understand the exact

meaning of individual words. Second, direct searches were conducted according to the data collection channels and period to accurately grasp the meaning of the extracted words.

2.3 Data Preprocessing

This study utilized the social matrix program Textom for data collection and analysis. During the analysis process, word frequency, TF-IDF, and centrality were reviewed. The Ucinet6's NetDraw feature was used for visualization to explore the connection structure and relationships between words, and CONCOR (cluster) analysis was performed. It should be noted that determining core words based solely on high frequency may not be accurate. TF-IDF (Term Frequency-Inverse Document Frequency) is a commonly used weighting factor in information retrieval and text mining. It quantifies the statistical importance of a specific word within an individual document, considering a collection of documents. TF-IDF is used for purposes such as measuring document similarity, ranking search engine results, and extracting keywords from documents (Wikipedia, 2019). Furthermore, centrality measures the number of words connected to a specific word and quantifies the degree of centrality of that word. The higher the centrality, the more connections the word has, indicating its importance [4]. CONCOR (CONvergence of iterated CORrelations) analysis is widely used in structural equivalence analysis to identify the relationships between blocks and words based on Pearson correlation analysis of the word co-occurrence matrix. Structural equivalence finds words that are structurally equivalent in connection and indicates similarities between words.

3. RESULT

3.1 Data Mining

From January 1, 2024, to May 1, 2024, text was collected from Naver, Google, and Daum using the keywords "brand management" and "overseas expansion." The sources included blogs, cafes, Knowledge In, news, and web documents. The collected text consisted of a total of 31,564 words, with an accumulated size of 14.87 MB.

3.2 Text Mining Research Results

The results of the text mining analysis on brand management and overseas expansion, including word frequency, TF-IDF, and centrality, are presented in <Table 1>. According to the frequency results, the words appeared in the following order: overseas (28,109), expansion (23,052), brand (16,895), company (13,945), support (12,539), management (11,625), market (8,404), business (8,209), global (5,232), Korea (4,754), domestic (4,728), and industry (3,995). The TF-IDF results showed: overseas (16,319), expansion (13,853), brand (17,837), company (17,195), support (17,685), management (14,411), market (13,051), business (14,312), global (10,337), Korea (9,671), domestic (9,340), and industry (8,642).

Table 1. Frequency and TF-IDF of Words

Word	Frequency	TF-IDF	Word	Frequency	TF-IDF
Overseas	28,109	16,319	Development	2,398	6,325
Expansion	23,052	13,853	Technology	2,367	6,352
Brand	16,895	17,837	Region	2,320	5,946

Company	13,945	17,195	Possibility	2,251	5,739
Support	12,539	17,685	Experience	2,188	6,380
Management	11,625	14,411	Analysis	2,148	6,018
Market	8,404	13,051	Announcement	2,086	5,886
Business	8,209	14,312	United States	2,085	5,871
Global	5,232	10,337	Economy	2,080	5,772
Korea Republic	4,754	9,671	Representative	2,080	5,574
Domestic	4,728	9,340	Related	2,073	5,594
Industry	3,995	8,642	Customer	2,061	5,795
Export	3,810	9,387	Target	2,004	5,594
Information	3,700	8,442	SMEs	1,999	5,774
Marketing	3,516	8,754	News	1,994	5,525
Product	3,500	8,012	Ideal	1,964	5,369
Recruitment	3,419	9,036	Progress	1,945	5,128
Hiring	2,969	7,503	Center	1,917	5,696
Strategy	2,808	7,153	Seoul	1,912	5,517
Economy	2,718	7,940	Our	1,897	5,447
Provision	2,633	6,238	Growth	1,878	5,143
Service	2,554	6,725	China	1,873	5,942
Operation	2,506	6,331	Company	1,870	5,289
Investment	2,427	6,568	Organization	1,819	5,242

3.3 Network Visualization Analysis Results

The results of the network visualization and CONCOR analysis, conducted through matrix data refinement, are presented in <Figure 1> and <Figure 2>. CONCOR analysis is a method that repeatedly performs analysis until correlations are found to identify similar groups. In other words, it is the most effective method for finding clusters in complexly intertwined [5]. According to the CONCOR analysis results:

- **Expansion, International, Technology, Economy, Expansion, Export**, etc., formed one cluster, which was named 'Overseas Expansion.'

- **Small and Medium-sized Enterprises, Center, Development, Content, Start-ups**, etc., formed another cluster, which was named 'Content Development Center.'

- **Brand, Management, Planning, Customer** formed a cluster, which was named 'Brand Management.'

- **Marketing, Product, Operation, Design, Merchandise, Expertise, Sales**, etc., formed a cluster, which was named 'Marketing Operations.'
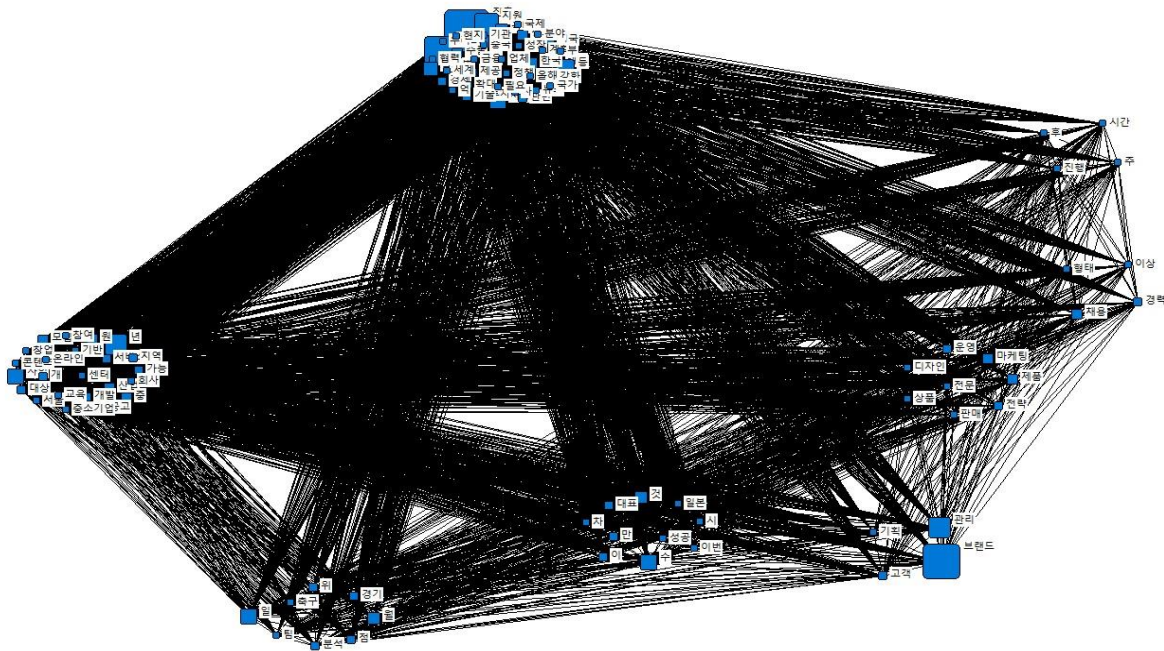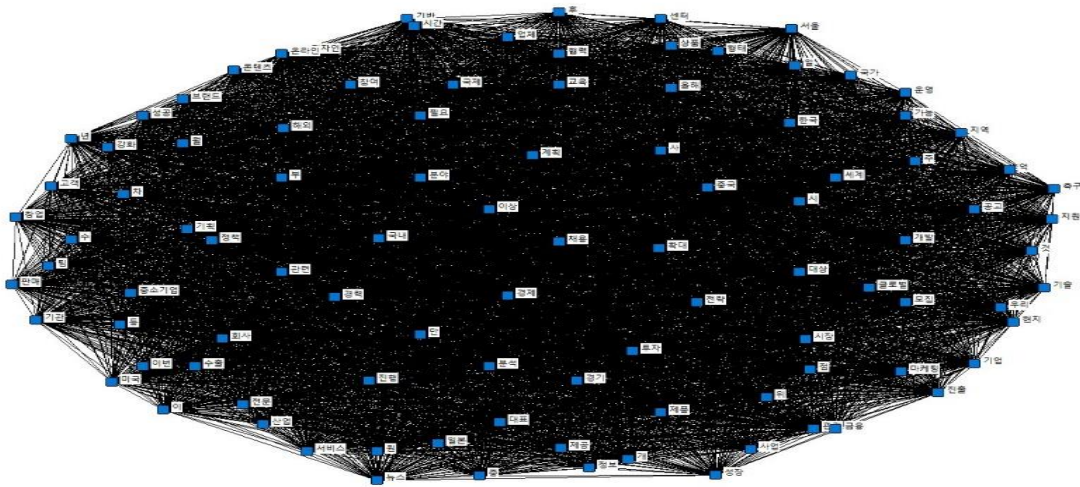
Figure 1. Network Visualization Analysis Results

Figure 2. CONCOR Analysis Results

4. CONCLUSION

This study investigated the relationship between brand management and international expansion of franchise companies using Textom, a big data analysis tool. The objective was to examine how brand management in franchise companies relates to international expansion and to propose more advanced strategies for the international expansion process. Data from January to May 2024 were collected and analyzed through text

mining to analyze the relationship between the two keywords. As revealed through clustering and CONCOR analysis, as well as word frequency counts, there is a close relationship between brand management and international expansion. It was found that effective brand management provides advantages in international expansion. The management of brand stories, systems, and manuals is crucial during international expansion, and effective marketing utilization can enhance brand awareness. Additionally, the continuous development of content should be a strategic component of brand management.

A limitation of this study is that Textom does not include demographic information, which means that demographic considerations were not addressed in this study. Therefore, to address this issue, subsequent research should include qualitative methods such as the Delphi technique and focus group studies. Since this study confirmed that brand management is related to international expansion, more detailed analysis methods for individual keywords could yield more diverse results.

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