Trademark network analysis for understanding homogenization and differentiation strategies in product naming

Keywords: trademark, naming strategy, cooccurrence network, strategic dynamics

Extended Abstract

Background and the purpose of the study

In recent years, branding strategies have become increasingly important to companies, as many product markets have become commoditized, making it difficult to differentiate products based on quality or functionality. Product naming (one of the branding strategies) has a particularly large impact on sales of inexpensive, high-consumption commodity products, such as beverages. By giving their products unique names, companies try to differentiate their products from those of their competitors, leading to consumer purchases. On the other hand, other companies often try to counteract the competitor's differentiation strategy by introducing a product with a name similar to the competitor's product name (known as a homogenization strategy). Too many products with similar names (sometimes even within the same company's product line) can lead to "cannibalization"[1], in which demand is eaten up by each other. Therefore, the degree of intentional differentiation/homogenization is a critical decision for a company[2]. This study analyzed the dynamics of "naming battles" using trademark data from the Japanese beverage market (to our knowledge, no other large-scale trademark data analysis studies exist).

Data and analysis preparation

All data on beverage trademarks registered by the four companies that dominate the Japanese beverage market (Asahi, Kirin, Suntory, and Sapporo) for the period of 2009/01/01 - 2021/12/31 were extracted from J-Plat-Pat[3], the Japanese patent and trademark data platform. There were 3,421 trademarks in total. We first decomposed each trademark phrase into words. Each word was then classified into one of the following categories according to its meaning: (i) ingredient (e.g., lemon, hops), (ii) type (e.g., beer, whiskey), (iii) taste-related expressions (e.g., dry, clear), and (iv) other expressions (e.g., rich, gold, happy).

Next, we constructed a trademark network with all trademarks as nodes. A given node (=trademark) pair is connected by a directed edge created from the older to the newer trademark, with a weight calculated as the Jaccard similarity coefficient between the sets of words used in those trademarks. The trademark network (visualized in Figure 1) has several densely connected clusters, some of which are composed of trademarks mostly of the same company (highlighted in yellow in the figure) and some others are composed of trademarks of multiple companies. Most product names are basically made up of words classified as (i) or (ii) combined with words classified as (iii) or (iv). Some words in (iv) are combined with a variety of words (e.g., "premium") and thus appear centrally in the network, while others appear near/far from certain (i) or (ii) words (e.g., "kaori (=fragrance)", which is located far from “beer").

Results

The analysis of the trademark network yielded several interesting findings. We observed differences in differentiation/homogenization strategies between companies. For example, Asahi and Suntory have a strong tendency that when one of them uses an (i) or (ii) word (i.e., ingredient or beverage type) in a product name for the first time, the other immediately imitates it. On the other hand, words classified as (iv) used for the first time by Asahi were often imitated by Kirin.

It is actually not uncommon for different companies to market products with names that are so similar to each other that consumers mistake them for a series of products from the same company. For instance, "zeitaku (=luxury) mikan (=orange)" is trademarked by Asahi, but "zeitaku grape" and "zeitaku lemon" are trademarked by Suntory.

After this, Asahi followed up with a series of "zeitaku + fruit name" products to regain the "zeitaku" brand. Meanwhile, the "lemon boom" began, with Kirin and Sapporo also joining the fray, and all four companies began to use "lemon" combined with various types of words. Suntory then quit using "zeitaku" and began to combine "lemon" with other (iii) and (iv) words to establish its own "lemon" series. Thus, our analysis allowed us to identify some path patterns that led to the naming boom. By tracing the temporal paths in the network, we were able to see how the boom (i.e., the imitation of each other by multiple companies) started and how each company differentiated its products from others'.

Words such as "kanpai (=cheers to)" and "style" (highlighted in yellow in the figure" are located on the periphery of the network. These are words classified as (iv), but unlike other (iv) words, are not combined with (i) or (ii) words. In fact, Kirin produced a series of names like "Cheers to Tokyo", which is a combination of the name of a prefecture (of which 47 exist in Japan) plus "kanpai". Kirin adopted the same differentiation strategy for "style". Kirin has registered a series of "(place name) + style" trademarks (e.g., "Havana style"). However, Asahi and Suntory have developed a homogenization strategy by registering a series of "(place name that Kirin had not used) + style". For consumers, which product name is by which company is entirely indistinguishable. Thus, Kirin failed to create its "style" brand.

We also analyzed and derived findings on various issues, including how each company's differentiation/homogenization strategies differ by word category ((i) - (iv)), which company was the first to capture social trends (e.g., the growing preference for natural products, and the increasing demand for sugar-reduced beverages), and how other companies followed suit.

Impact of the work

To our knowledge, this is the first study of branding strategies using large-scale data on trademarks. As mentioned above, in highly commoditized markets, the strategy of trying to disrupt another company's brand and steal consumers by making the product name look exactly like that of the other company is frequently implemented. By visualizing these "naming battle" dynamics as a network, this study successfully captures the differences in each company's strategies and the boom formation process. This study has a significant impact on the field of branding strategy, making known the effectiveness of new analytical methods.

References

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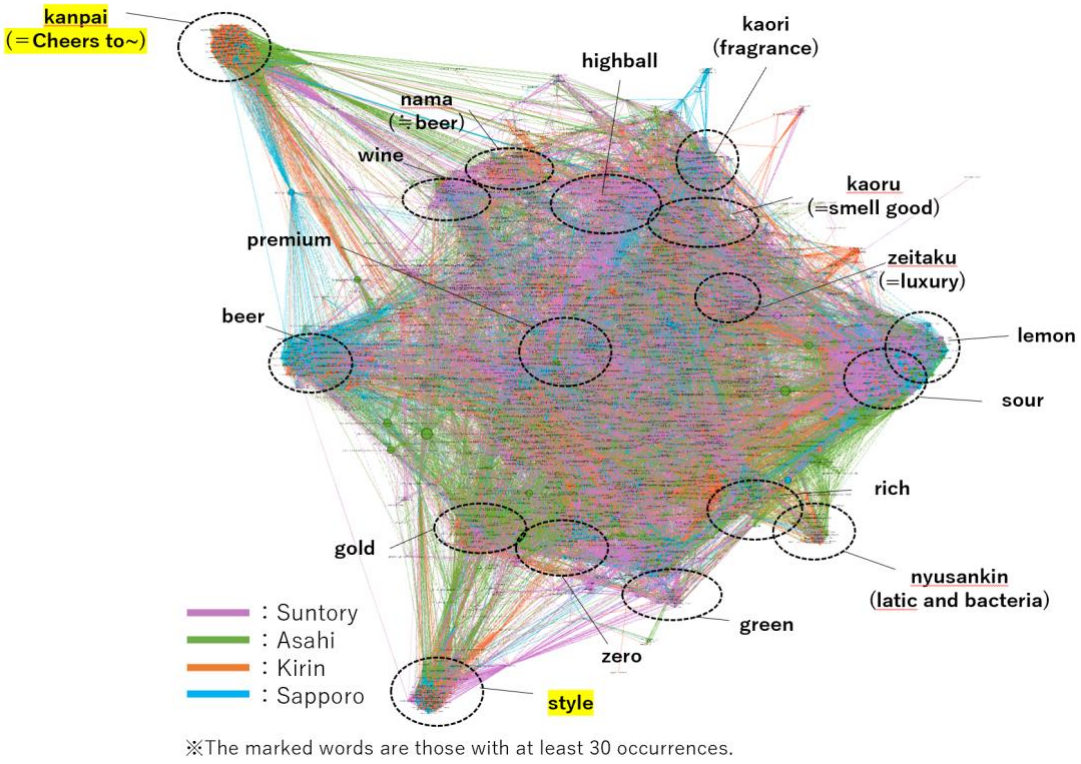

Figure 1: Trademark network in the beverage industry in Japan

Note: The color of each edge is the same as the color of the node on the origin (i.e., imitated) side of the edge.