

Why Do We Still Believe in Milk?

An Analysis of Propaganda Skills Adopted in Official News of Valio through Topic Modelling

1. Introduction

The dairy industry is well-developed in Finland and it is a result of long-term propaganda (Maitomyytit-kampanjasta, 2022). Valio Group is a leader in the dairy industry as well as Finland's biggest exporter of food products. It not only produces milk-based and plant-based products but also engages in extensive outreach efforts for dairy food promotion (Reports and Financial Statements, 2022).

From the standpoint of propaganda, the industrial promotion of dairy food is not only an enlightenment of public health but also leads to the increasing consumption of dairy food by informing and persuading the public sphere.

In this research, I selected the famous milk brand in Finland-Valio as a breakthrough point to explore propaganda skills used in the dairy industrial campaign. The latest news content of Valio from 2017 to 2023 will be investigated by computational analysis of Topic Modelling. The object of study is limited to the officially published news articles from Valio's website, which can avoid distractions from irrelevant factors as much as possible and make the outcome more representative within a specific boundary.

2. Backgrounds and objectives

a) Milk Myths and Milk War

The propaganda of milk is vital in the advertising of dairy product brands and communications of the government. "The Finnish Milk Propaganda Bureau" was founded in 1929 by milk producers as well as the government. A variety of enlightenment on the advantages of milk was conducted for the public, especially at schools targeting children. Campaigns promoting the positive impact of milk-based products on health, such as cream and butter often extoll the virtues of milk over coffee. After World War II, Milk was strongly subsidized (in Nordics and internationally) as an effective means to fight

undernourishment (Jallinoja, 2020).

However, a counter-propaganda of milk happened in 2020, named Oatly's "Milk Myths" campaign, in which a Swedish oat product brand "Oatly" sent a "Milk Myths" booklet to the homes of Finnish schoolchildren. The booklet presented 20 statements called milk myths related to the production, consumption and nutritional value of milk, and Oatly refuted them in the booklet. What's more, Oatly's representatives stressed that the campaign is also concerned about issues of climate change (Jallinoja, 2020).

In summary, the nutritional value of dairy products is the core question in this "milk war". Animal fat is suspected to be harmful to people's health, which has led to more people choosing vegetable fat instead. Besides, the negative impact on the global climate of cattle farming is also a point that the dairy industry is being accused of.

b) Propaganda skills

Propaganda is a designed activity, through which the controlling people or organization reorganize specific information and sends it to targeted receivers in a systematic method to change their opinions and actions in the end. It is quite common in the marketing field with an original intention to persuade customers to buy specific products through promoting the goodness of it. (Snow, 2019, p.1).

There are two typical techniques which are supposed to be used in the Finland milk industry. The first is Glittering Generalities, which connects the product with shining ideas to appeal to our emotions of love (Clyde R, 1937). Previous research found that health, environment, economy, and Finnishness are the most common topics in the comments about milk-based food from related experts and news (Maitomytit-kampanjasta, 2022).

Another is Testimonial, which means statements from prominent people are promoted with the expectation that the crowd will follow the leader (Clyde R, 1937). In most of the reports of Valio, there are lots of quotations from experts or government departments, which back up their advertising of the goodness of dairy products.

However, in the context of the Milk War, whether the dairy industry adopts different techniques of propaganda to fight against the opposite opinions is the jumping-off point of this study.

c) Computational methods

I plan to use Topic modelling (TM) to capture the main topics in the news articles of Valio. TM is a family of computational algorithms that aim at “discovering the main themes that pervade a large and otherwise unstructured collection of documents”. Once I have an understanding of the content of the news, I can conduct a propaganda analysis about how Valio promotes milk-based food consumption in changing times through public communication.

d) Research questions

Q1: What are the main themes in Valio published news from 2017 to 2023?

Q2: What kinds of propaganda skills are buried in the public news of Valio?

3. Data retrieval and preprocessing

My dataset is a news archive of Valio from 2017 to 2023. <https://www.valio.com/news-archive/>. Public credibility is crucial when communicating serious food-related knowledge. Besides, all kinds of news will use the news published in official sources as a basis. Hence, I chose the news collection on the official websites of Valio to be data material for content analysis.

I used Python to retrieve raw data and preprocess it. I first fetched the text content of each link on the webpage by web crawling and only kept the title and main body of each article. Then I processed it into wordlists, removed the stopwords, punctuations and numbers and finally converted it into a JSON file which is more suitable for executing Topic Modelling.

4. Methods and implementation

Topic modelling (TM) was conducted to figure out the main themes in the information Valio conveyed to the consumers. I created a LDA Model with Gensim, and transformed the model's data for visualization by pyLDAvis. I set the number of topics to be 5 and 10 successively. When I observed the Intertopic Distance Map of 10 topics, I found that 8 of them overlapped largely. So I suspected there may be only 3 main topics. The situation was similar when the number of topics was set to

5, for 3 of them are overlapped. Therefore, I decided to use the outcome of 5 topics to conduct the final analysis:

Topic 1: 0.055*"dairy" + 0.027*"carbon" + 0.020*"product" + 0.016*"packaging" + 0.015*"company" + 0.015*"footprint" + 0.015*"market" + 0.013*"reduce" + 0.012*"million" + 0.012*"business"

Topic 2: 0.186*"valio" + 0.034*"production" + 0.022*"year" + 0.019*"biogas" + 0.016*"farm" + 0.012*"ingredients" + 0.012*"one" + 0.011*"people" + 0.011*"methane" + 0.010*"brand"

Topic 3: 0.082*"milk" + 0.017*"use" + 0.016*"plant" + 0.016*"energy" + 0.014*"climate" + 0.014*"consumers" + 0.014*"sustainability" + 0.012*"per" + 0.012*"manure" + 0.010*"global"

Topic 4: 0.049*"products" + 0.036*"new" + 0.031*"also" + 0.026*"finnish" + 0.015*"farmer" + 0.015*"sales" + 0.012*"lactose" + 0.011*"used" + 0.011*"research" + 0.010*"board"

Topic 5: 0.047*"food" + 0.036*"finland" + 0.027*"says" + 0.025*"farms" + 0.019*"world" + 0.018*"emissions" + 0.016*"development" + 0.015*"made" + 0.015*"solutions" + 0.013*"plastic"

5. Results analysis

Q1: What are the main themes in Valio published news from 2017 to 2023?

In topic 1, the most important noun is “carbon” besides “dairy”. And the “footprint” appears a lot of times. This group of words could refer to Carbon footprint calculation, which is an essential concept related to responsible and sustainable operations. Another key noun is “packaging”. In short, the theme about carbon footprint by reducing the product packaging is relatively clear in Topic 1.

In topic 2, “biogas” and “methane” are two related words. “Methane” refers to a main coproduct in cattle farms, and “biogas” is a type of renewable energy source produced by agricultural by-products. Taking into account the appearance of “farm” and “ingredient”, Valio is supposed to improve the ingredients in the process of farming to reduce the production of methane and reuse by-products to generate “biogas”. Both actions are relevant to the carbon footprint by solving the problems of methane and other coproducts of dairy farming.

In topic 3, the words "plant", "manure" and “energy” implicate the recycling of

cattle's manure for planting to realise the "sustainability" and do good for "global" "climate".

In topic 4, the "products" becomes the top factor with the adjective "new". Meanwhile, the word "lactose" comes out. Given that lactose-free is a milestone in the technology development of Valio, the Research&Production remains a core content in its promotion.

In topic 5, the meaning of words becomes blurred and unfocused. It may state that "Finland" is trying to find "solutions" related to "plastic" reduction to help a better "development" of the "world". In this way, it is highly related to the topic 1.

Besides, there are another three points that need to be paid attention to. First, "finnish" and "finland" have a high weight in topic 4 and topic 5, which shows the concept of the nation plays a vital role in the news. Second, "says" ranks 3 in topic 5, which implies there are lots of quotations. Third, "farmer" ranks 5 in topic 4, and "farm" appears twice in topic 2 and topic 5. It may indicate Valio attaches great importance to the demonstration of cooperation with farmers.

Q2: What kinds of propaganda skills are buried in the public news of Valio?

To check the reliability of the interpretation of some themes generated from TM, I looked through the titles of these news articles. And there are related articles, which provide logical evidence for the interpretation of the topics. Then I conducted an analysis of possible propaganda skills of Valio based on the themes found :

a) Glittering Generalities & Predispositions of the Audience: Creating Resonance

Glittering Generalities is a device by which the propagandist identifies his program with virtue by use of "virtue words". And if the message is produced from the existing shared interests and beliefs, it will be more likely to win people's agreement, which is called creating resonance (Jowett & O'Donnell, 2015).

The first three topics are all about environment-friendly issues, covering packaging, methane processing and manure reuse, and even topic 5 is related to this theme literally. The environmental protection theme has earned public attention worldwide. It is a critical concern in building and exhibiting a good

brand image and a company's social responsibility. Hence, propagandizing the operations in the area of environmental protection is beneficial for Valio to earn a good reputation and win public advocacy.

Additionally, the promotion of innovation in R&P is also a shining idea which is attractive to the public as another vital topic in the Valio news.

b) Card stacking

However, the primary focus of milk promotion before was the nutritive value. Currently, environmental protection has become the most important theme discussed in the Valio official news.

Given the background of "Milk War", it is known that questioning the nutrition of dairy food is the main content in the statements of "Oatly", and there is more and more non-supportive evidence for dairy food from experts. Even Valio itself creates a new branch of plant-based products—"Oddlygood". Therefore, Valio initiatively changes the attention of the public to their endeavour in the field of environment protection rather than gets stuck in the debate of dairy food nutrition.

This action is a skill of Card stacking in propaganda, which is employed by propagandists to under-emphasize and over-emphasize to dodge issues and evade facts(Clyde R, 1937).

c) The Transfer Device:

The transfer is a device by which the propagandist carries over the authority, sanction, and prestige of something people respect and revere to something he would have us accept(Clyde R, 1937). The Finnishness is important in the news content as "finnish" and "finland" have a high weight in the article. Thereby Valio transfers people's trust and support for the nation to their company's campaign or program.

d) The Testimonial Device

Statements from expert groups and governmental committees were quoted largely in the news of Valio. Utilizing these testimonials accords with the tendency that the crowd will follow the leader(Jowett & O'Donnell, 2015). This is an application of a testimonial device.

e) The Plain Folks device

The Plain Folks device is used by politicians, labour leaders, businessmen, and even ministers and educators to win public confidence by appearing to be common people like people themselves (Clyde R, 1937). “Farmers” are frequently mentioned in the news, which shows Valio cares about their interests and has a good relationship with them. Staying close to the primary supporters embodies the Plain Folks device.

6. Biases and limitations

The news archive only shows limited content in the communication of Valio dairy products. For example, a large amount of social media advertising is lost.

Also, as an official source of brand information, it acts as first-hand information to generate content in other communication activities, but it may lack the narrative form and content which are designed specifically for consumers for better effectiveness of persuasion. So the propaganda skills should be explained within the context of official sources.

Besides, I did not conduct lexicon normalization like stemming and lemmatizing in the preprocessing of the words. On one hand, the dataset is not that big and I want to keep the content as detailed as possible. On the other hand, I would like to see “farm” and “farmers” as two kinds of information even though they share one lemma. However, I am not sure if it will impact the outcome of the LDA model.

Furthermore, I removed numbers in the text, but the utilization of numbers can be a way to make the content look more professional and authentic. The possible skills related to numbers may be hard to verify through the methods designed for analyzing text data.

7. Conclusion and further thoughts

- a) In conclusion, the main themes and features of news content on the official websites of Valio from 2017 to 2023 are discovered through Topic Modelling. It is found that the core communication content of Valio is converted to environmental protection from the nutritive value of dairy products under the circumstances of Milk War, and the competence of technological innovation is kept. Besides, the Finnishness, the cooperation with farmers and the importance attached to testimonials are three prominent features. In terms of

propaganda skills, Glittering generalities, Creating resonance, Card stacking, Transfer device, Testimonial device and Plain folks device are detected through the analysis of the news content.

- b) In future studies, the dataset can be expanded to the content about dairy food from different types of media and subjects, such as social media and government reports. Moreover, the effect of propaganda can be measured by analysing the reflection of the targeted audience, for which the dataset can be the collection of consumers' comments from media or e-commerce platforms.

8. Bibliography

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