2023 Proceedings



Sustainability Communications among Fashion Retailers: Comparison of Patagonia and H&M

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Keywords: Sustainability communication, fast fashion, slow fashion, data mining

Background and Purpose: Previous studies have found that consumers are increasingly concerned about the environmental and social impacts of the products they purchase and are looking for ways to align their values with their purchasing behaviors (e.g., Shen & Wang, 2012). A growing number of consumers are specifically interested in the sustainability of fast fashion brands and are looking for environmentally and socially responsible alternatives (McNeill & Moore, 2015). This research will provide insights into the consumer perception of sustainable fashion and highlight the impact of fast fashion on sustainability. The purpose of this research is to explore and compare the sustainability practices of a fast fashion brand and a sustainable brand, using consumers' opinions gathered from web-scraped tweets. By analyzing these tweets, we aim to gain insights into how consumers perceive and respond to sustainable and fast fashion brands' sustainability practices. The findings of this study will contribute to a better understanding of how sustainability affects consumers' purchasing decisions and how fast fashion and sustainable brands can improve their sustainability practices to meet consumers' expectations.

Method: The data mining approach was employed in this study to evaluate consumers' actual opinions on the sustainability practices by fashion retailers. We scraped consumers' most recent Twitter tweets on sustainability within Patagonia and H&M from the past 5 years. The methodology of this project includes 4 phases: data collection, data preprocessing, data analysis, and data visualization. Data collection: Using Twitter as our main source for data collection, we have scraped data on Patagonia and H&M with multiple keywords related to sustainability such as sustainability, transparency, fairtrade, working conditions, environmental, labor, corporate social responsibility, ethical, sweatshop from past 5 years (September 2017 to September 2022). By using a comprehensive Google search, a top fast fashion brand and a sustainable brand i.e., Patagonia and H&M were identified. A total of Patagonia and H&M tweets about these brands were collected using a python library called Snscrape. Data preprocessing: The raw data were first cleaned by removing missing and null comments, then all the words were converted to lowercase formats. Punctuations, emojis, duplicates, and stop words were removed before transforming all words to their base format (lemmatization). Data analysis: In this part the sentiment computation is performed for all the tweets and a polarity score is assigned for each tweet, depending on the polarity score tweets are classified into 3 categories i.e., positive

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(Polarity score>0), negative (Polarity score<0) and neutral (Polarity score=0) tweets. For Patagonia out of 14576 total tweets, 2290 were classified negative, 1436 Neutral and 10850 were classified positive and for H&M out of 19722 total tweets, 4642 were classified negative, 4083 Neutral, and 10997 were classified positive. Then we generated a list of the most frequently used words from the tweets and created custom numbered N-gram nodes and edges. **Data visualization:** Here using the N gram nodes and edges we created a weighted graph using Gephi (2017) and generated the co-occurrence plots on Patagonia and H&M tweets (Figure 1).

Findings: From the Gephi files generated based on the collected tweets we can comprehend that consumers are mad at H&M for several reasons such as bad working conditions, releasing the conscious collection late, and several unethical reasons. Whereas if we look at the results of Patagonia consumers have expressed their liking about Patagonia and it is a sustainable brand, Patagonia being good for the planet, about the great initiatives taken by the founder. Detailed findings were added to Table 1.

Also, from the polarity scores that we have obtained of the tweets, it is evident that out of all the tweets on H&M. Only 55 percent of them are positive whereas for Patagonia 75 percent seemed to be positive. Overall consumers have expressed a liking towards the sustainable brand (Patagonia) and a dislike towards the fast fashion brand (H&M).

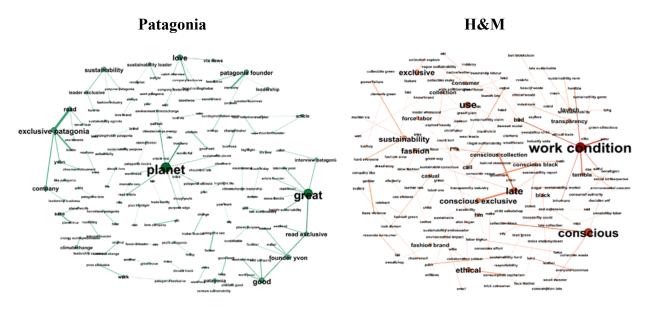


Figure 1: The co-occurrence plots on Patagonia and H&M tweets

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Table 1: Customers' perceptions of Patagonia and H&M

Patagonia	Н&М
Findings: sustainable leader, good company, great initiative, true hero, sustainable planet, love brand, love company, favorite leader, change maker business, sustainable planet purpose.	Findings: Horrible working conditions, late conscious collection, sweatshop fashion brand, vague sustainability claim, terrible social consequence, environmental concern.
Leader- sustainable; favorite; change maker	Work Condition- bad, horrible; poor; awful; terrible; inhumane
Company- good; love	Child- labor; bad; slave
Great- Patagonia interview; Yvon; founder; sustainability	Conscious- green issue; environmental concern

Discussion/implications: The results of this study suggest that consumers are increasingly dissatisfied with fast fashion brands and their unsustainable practices, even if they have a sustainable collection. The sentiment analysis of Twitter data revealed a significant amount of anger and frustration towards these brands for their environmental impact. In contrast, sustainable brands were associated with positive emotions and received high levels of admiration and support. These findings have significant implications for the fashion industry, as they highlight the growing demand for sustainable practices and the need for fast fashion brands to adopt more sustainable business models. To remain competitive and meet consumer expectations, fast fashion brands may need to rethink their approach to sustainability and implement more environmentally friendly practices.

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