

## A Study of Sustainability Practices of US Fashion Brands Through Dictionary-Based Text Analysis

Muzhen Li, Md. Rafiqul Islam Rana, and Li Zhao, University of Missouri

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“Sustainable development meets the needs of the present without compromising the well-being of future generations” (Brundtland, Khalid, & Agnelli, 1987, p. 8). Fashion brands and retailers are adopting various sustainability strategies to pursue sustainable development. In addition, environmental and social sustainability issues and corporate social responsibility (CSR) in global supply chains are receiving growing attention from various stakeholders such as consumers, public and private organizations, trade unions, and other international organizations (Rana & Ha-Brookshire, 2018). As a result, many companies, especially big-name fashion brands, have started to publish annual sustainability and CSR reports. However, it’s challenging for the public to systematically extract valuable information, monitor past or current practices, and compare or contrast companies’ efforts toward sustainability across different fashion brands. Therefore, in this study we aimed to (1) provide a holistic perspective of fashion brands sustainable development and (2) investigate the sustainability practices of US fashion brands and their area of emphasis through a large amount of their publicly available information.

In this paper, firstly, we have focused on the theoretical framework of the Triple Bottom Line (TBL) proposed by Elkington (1998). TBL consists of social equity, economic, and environmental factors which are essential in considering if an organization wants to achieve their sustainability goals. As the goal of this study is to identify the sustainable practices, TBL sheds light on the different sustainability aspects within the social, environmental and economic spectrum. Secondly, Social Cognitive Theory (SCT) proposed by Bandura (2001) can be frequently seen in researches pertaining to health, communication, education and business, but has been not been utilized to study the sustainable behavior of fashion brands (Sampaio, Thomas, & Font, 2012). SCT focuses on the factors that encourage an entity to comply with social and personal norms. Thus, it could be used to research the elements that make fashion brands practice different aspects of sustainability. SCT proposes that organizations embrace specific sustainability actions based on the organizations’ mission and vision, their stakeholders’ preferences and the social and environmental influences in the current time.

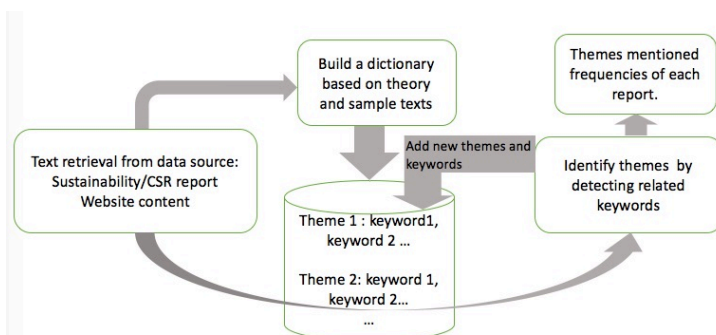


Figure 1. Research Method Flowchart

To achieve the research goal, more than 2,000 pages of publicly available sustainability/ CSR reports and website contents of 12 US fashion brands from all public companies in the apparel industry were collected. To identify and classify the sustainability practices in these

documents, a dictionary approach by Python was used as Figure 1 shows. To build a thorough dictionary, 7 sustainability reports, whose categories cover jewelry, footwear, apparel and bag brands are considered as sample dataset. Based on TBL theory, two researchers reviewed sample dataset and extracted the keywords associated with major sustainability themes. For example, when theme is “energy”, the keywords could be “green energy”, “renewable energy” and so on. These themes and keywords made up of a dictionary about fashion sustainability. This dictionary could be kept updated by feeding more themes and keywords to make sure it always adequately reflects the entire dataset. Historical text data of each company were detected based on the dictionary. Each time a keyword was detected, the related theme was considered mentioned once in this report. The proportions of themes of each company mentioned were calculated and compared to investigate the sustainability practices performed by each US fashion brands.

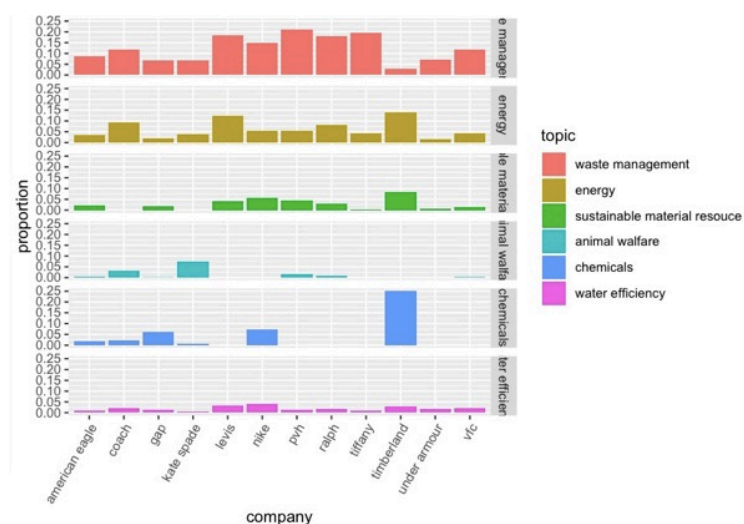


Figure 2. sustainability practice proportions in environmental aspect

Results demonstrated that both environment and social themes with different emphasis emerged. As an example, Figure 2 shows the major themes of sustainability practice proportions among these fashion brands from an environmental aspect. Different colors represent different practice themes. Almost all brands heavily mentioned waste management, except Timberland, which focused more on the “chemicals” theme. Kate Spade and Coach are the top 2 talking about animal welfare, since they are known as luxury brands claiming fur-free. Overall, Nike, Timberland and Levis

reveal concerns about the environment most, while American Eagle, Gap and Under Armour pay more attention on the sustainability practice in social aspect. For example, Nike states “bring inspiration and innovation to every athlete” (Nike, 2018), while Gap states “create emotional connections with customers” (Farfan, 2018). According to SCT theory, the difference in mission leads to difference in sustainability practice. The footwear brands, like Nike, adopt innovation technologies and practices in finding better material and reduce energy usage. Meanwhile, apparel brands do more on labor management and employee development. Levi’s emphasizes a lot on water efficiency and waste management because of large amount of waste water resulting from dyeing paths in denim jeans industry, compared with other brands.

While many researchers have explored sustainability, practices done by different organizations from different sectors by analyzing their CSR reports (Kozlowski, Searcy, & Bardecki, 2015; Turker & Altuntas, 2014), this is the first time a computer-assisted text analysis approach was applied to explore the sustainability practices of US fashion brands. The finding suggests that US fashion brands implement different sustainability strategies based on product categories and competitive advantages. All these brands pay most attention to supply chain management and improvement. Footwear and Denim brands focus more on environment-friendly strategy, while apparel companies report more about progress of social and ethical efforts. This is important information from consumers' perspectives as they will be able to get a holistic idea of the sustainable practices performed by various fashion brands while choosing products and causes they care for. These findings will also be beneficial for small-medium fashion companies to get a direction on where to emphasize if they want to achieve sustainability goal as well. For future research, data from other sources regarding sustainability, such as social media, could be feed to the system to continue refining and improving associated themes. The historical CSR practices of more fashion brands could also be tracked and analyzed to investigate the trends over time.

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