Representation of Plus-Size Fashion Models in Academic Research:
A Text Mining Analysis of Size-Inclusivity

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Introduction: Incorporating plus-size models, defined as those with US women's apparel sizes of 14 or more (Joo & Wu, 2021; Park & Yun, 2019), into fashion advertising has challenged traditional beauty norms and sparked significant debates within the fashion industry. Amidst ongoing debates about conventional beauty ideals and the emerging focus on diversity, this study investigates the academic discussions on this topic, highlighting its implications for inclusivity and body positivity within both the fashion industry and academia. Using text mining as our method, we aim to identify key themes and gaps in existing literature, thereby setting the groundwork for future research. This effort seeks to promote a more inclusive understanding of fashion's societal role, emphasizing the importance of diverse model representation.

Literature Review: The scholarly examination of fashion model sizing has significantly impacted industry practices and sociocultural views (Groesz et al., 2002). Early research on plus-size models, emerging around 2010, often reflected the fashion industry's restrictive beauty standards, with limited representation of plus-size models in mainstream fashion (Bissell & Rask, 2010). However, the growth of body positivity movements has shifted research towards greater inclusivity (Joo & Wu, 2021; Park & Yun, 2019). Recent studies have reported the positive consequences of diverse model sizes on consumer well-being (Kim & Yang, 2023). Conversely, some studies have insisted that employing plus-size models in advertising may not directly increase fashion brands' profits, as the industry tends to promote idealized, yet unattainable beauty standards (Aagerup, 2011; Aagerup & Scharf, 2018). Moreover, despite varied methodologies, there is a noticeable lack of long-term studies addressing the nuanced debate surrounding size-inclusive fashion models. The current academic discourse underscores the need for comprehensive research that considers evolving consumer expectations and the industry's responses to a diversifying audience. In response, our text mining study aims to provide in-depth insights into plus-size fashion models, analyzing relevant studies from the past two decades.

Methods: This study utilizes text mining with Natural Language Processing (NLP) and Python-based Latent Dirichlet Allocation (LDA) for topic modeling, enhancing interpretability with LDAvis. Developed by Blei et al. (2003) to improve upon previous models, LDA employs unsupervised learning and clustering to address overfitting, refining topic analysis. The methodology involved three main steps: data collection, preprocessing, and analysis. Initially,

research articles were collected from SCOPUS, Web of Science, and PubMed using terms "plus-size model" and "oversized fashion model," covering publications from March 1995 to February 2024. The dataset comprised titles, authors, publication years, journal titles, volumes, abstracts, keywords, and URLs. In the preprocessing phase, data was cleaned by removing punctuation, common words, and unifying synonyms, then transformed into a computationally analyzable format using Term Frequency-Inverse Document Frequency (TF-IDF). This process converted the text into a Bag of Words (BoW), setting the stage for LDA analysis. Determining the optimal number of topics involved filtering terms based on TF-IDF scores to improve analysis precision. Following recommendations from previous studies, we evaluated multiple TF-IDF criteria, including average, median, and a threshold score of 0.1. Utilizing the median threshold, we achieved a coherence score of 0.34, as indicated by LDAvis graphical results, guiding the final topic selection.

Results: The results identified seven distinct subjects regarding plus-size models. By using the median threshold, the total number of BoW included in the topic modeling was 1,201. Finally, we named the 7 topics based on the extracted specific terms that appeared the most frequently in the group of research allocated to the specific topic, as outlined in Tab 1.

[Tab 1] Seven topics from the literature of plus-size models

Topic	Name	Example salient keywords
1	Positive body image	Advertising, Consumer, Attitude, Research, Brand, Positive, Idealized, Comparison, Self-esteem, Affect, Demonstrate, Find, Purchase, Response, Domain, etc.
2	self-censorship	Comment, Negative, Participant, Control, Standard, Condition, Feature, Stroop, Mood, Level, Analysis, Young, Photo, Interference, Femininity, etc.
3	Ideal body standard	Image, Exposure, Woman, Dissatisfaction, Thin, Effect, Follow, Plus-sized, Increase, Overweight, Test, Mass, Age, Celebrity, Ideal, etc.
4	Self-evaluation	Advertisement, Satisfaction, View, Great, Slogan, Region, Attention, Objectify, Discrepancy, Actual-ideal, Visual, Adolescent, Predict, Adult, Group, etc.
5	Size inclusive Advertisement	Medium, Social, Ad, Frame, Size, Fit, Shape, Inclusive, Idealized, Schema, Mainstream, Video, Average-size, Trait, Recruit, etc.
6	Diversity in fashion	Size, Food, Commercial, State, Implicit, Fat, Black, Campaign, Evaluation, Unhealthy, Sexuality, Fashion, Task, Clothing, Status, etc.
7	Health issues	Fashion, Industry, Plus-size, Health, Regulation, Female, Eat, Lead, Force, Similarity, Compare, High, Perceive, Product, Self-evaluations, etc.

The first topic pertains to 'positive body image,' highlighting the link between plus-size models, self-esteem, and consumer behavior, emphasizing the beneficial impact on customers' attitudes and purchase decisions. The fifth topic, 'size-inclusive advertising,' shifts focus to trends within the advertising industry, rather than direct consumer reactions. 'Ideal body standard,' the third topic, contrasts plus-size models with the negative effects of traditional slim ideals, noting the dissatisfaction many women feel towards unrealistic body figures. The second and fourth

topics, 'self-censorship' and 'self-evaluation,' delve into how exposure to plus-size models influences personal body perception and self-assessment, with 'self-censorship' involving reactions to societal standards and 'self-evaluation' exploring the gap between actual and ideal self-image. The sixth topic, 'diversity in fashion,' examines the broader challenges of inclusivity in marketing, considering ethnicity, body shapes, and sexuality as key factors. Lastly, 'health issues' addresses the harmful consequences of promoting extremely thin models as ideals, such as eating disorders, suggesting the need for regulatory measures to mitigate these effects.

<u>Discussion and Conclusion:</u> Our findings highlight the positive impact of plus-size models on body positivity and consumer self-esteem, juxtaposed with the fashion industry's reluctance due to profitability concerns. Key themes, such as the need for size-inclusive advertising and the ethical implications of promoting unrealistic body standards, underscore a societal shift towards embracing diversity. However, the persistence of narrow beauty ideals remains a significant challenge. The industry stands at a crossroads, needing to balance commercial interests with a moral obligation to foster inclusivity. This study advocates for continued exploration into reconciling consumer expectations with industry practices, aiming for a fashion landscape that celebrates all body types. Our text mining approach offers valuable insights into this complex dialogue, urging a more inclusive and ethically responsible approach in fashion.

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