Fat Girls of All Kinds, Unite!--Sentiment Analysis on Comments to Influencers of Plus Size Women's Clothing at Xiaohongshu

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Abstract. Many existing studies have focused on the pursuit of thinness as a body display on social media, which triggers body image anxiety and negative emotions among users; however, fewer existing studies have examined whether blog posts about plus-size women's clothing can elicit body positivity and increase body acceptance among users. Focusing on the Xiaohongshu social media platform in China, this study used Python to collect all comments on the top ten most popular blog posts about plus-size women's clothing in Xiaohongshu, and MaxQDA was used to analyze these comments in a lexical cloud, as well as to conduct sentiment analysis on the 111 extracted keywords. This study reveals that the content of blog posts about plus-size women's clothing can create a harmonious and friendly body image communication environment in the blogs' comment section, which can bring body image positivity and body image acceptance to users. These findings have practical implications for future research in building body positivity in women.

Keywords: plus-size women's clothing blogs, body positivity, body image, sentiment analysis.

1 Introduction

The quest for slimness is deeply rooted in modern society, especially for women. Furthermore, the use of social media has exacerbated such phenomena. Numerous studies have found that social media is widely believed to be dominant in influencing the ideal body's norms and beauty standards [1-4]. Corresponding studies have detailed the detrimental effects on young women's body satisfaction due to heavy exposure to idealized images on social media platforms [1-4].

In today's increasingly diverse global aesthetic, many bloggers are no longer limited to thinner bodies. U.S. academics have begun to conduct some research on plus-size women bloggers, who have chosen not to follow the mainstream aesthetic of the past, but rather women who have chosen to reconcile themselves with their bodies, reverting to terms such as "fat" and "plus-size," and instead of pursuing thinness, clearly labeling their height and weight to help social media users pursue fashion [5].

In America, roughly two out of three U.S. adults are overweight or obese (69 percent) [6]. Therefore, there are many studies on plus-size women's clothing in the U.S. However, in China, the topic of obesity and plus-size is not as hot as in the United States. In recent years, a World Health Organization report said that Chinese people are catching up fast with the developed world regarding obesity and high BMI. The Dietary Guidelines for Chinese Residents 2022, released by the Chinese Nutrition Society in April, reported that 50.7 percent of Chinese adults are now overweight, with 16.4 percent being obese [7].

The rise in obesity rates among people has made more Chinese people aware of different body types and aesthetic diversity. With the awakening of feminine consciousness, Xiaohongshu APP (or called Little Red Book), which focuses on "her economy," is developing rapidly [8]. In 2022, the monthly activity of Xiaohongshu exceeded 200 million, after Tiktok, Weibo, Kuaishou, and Bilibili. However, unlike these four apps, the users of Xiaohongshu are mainly women, and they occupy the absolute proportion of platform users, with female users accounting for 88.8% of the platform's user volume, while men occupy only 11.2%. The age of the users is mainly 25-34 years old, and the geographical distribution of the users is mainly in Guangdong, Shanghai, Beijing, and other first-tier cities [9]. Because of its unique business model, Xiaohongshu was named a "Chinese Brand" by People's Daily and called "Amazon +Instagram" (Amazon + Photo Wall) by traditional overseas media [8].

In this study, the comments in the ten most popular blog posts with the keyword plus-size women's clothing were intercepted from the blog posts of plus-size women's clothing bloggers in Xiaohongshu. About 10,000 comments were collected to analyze whether the content of the blog posts of plus-size women's clothing bloggers can help Chinese women build body positivity and self-identity.

2   Literature Review

Body image is viewed as having two main components, a 'perceptual component' and an 'attitudinal component.' Focused on the assessment of (1) the accuracy of an individual's body size estimation; and (2) the attitudes or feelings an individual has towards their own body [10]. Existing research has demonstrated a positive correlation between Facebook usage and body dissatisfaction. The longer you use social media (e.g., Facebook, Instagram), the more likely you are to have problems with body image. Social media use is associated with body image concerns, particularly if the users are engaging in certain kinds of activities on social media, such as making appearance comparisons to others [1-4]. Fardouly found that Instagram usage was positively associated with self-objectification among young women and that this relationship was mediated by internalization of the societal beauty ideal and appearance comparisons to celebrities on Instagram [11]. Hogue study showing actively engaging with attractive peers' social media causes worsened body image in young adult women [12]. The current study is not limited to Western mainstream social media, while Hu investigated how Douyin, a Chinese mainstream social media, affects women's body image. Evidence suggests that Douyin body challenges videos that promote body dissatisfaction through thin body

presentations and unrealistic body expectations may be dangerous as they could play a role in the development of eating disorders [13].

In response to the dominant message of appearance ideals in traditional and social media, there is an increasingly strong rejection of these narrowly defined and inaccessible body ideals in favor of a more inclusive and positive conceptualization of body image [14]. Positive body imagery is a multifaceted construct that includes love and respect for the body [15] and is used in research as body appreciation [16]. Some social media users are using online platforms to promote a more inclusive view of beauty. The body positivity movement, organized primarily through social media, seeks to challenge narrow ideals of appearance by encouraging acceptance of bodies of any age, shape, size, color, or ability [17].

Sentiment analysis has a wide range of applications that can be used in different domains and plays a huge role in understanding people's perceptions, and helps in decision making. Two main approaches to sentiment analysis have been identified, one is the machine learning approach, and the other is lexicon-based approach. Machine learning methods use algorithms to extract and detect emotions from data while lexicon based methods work by computing positive and negative words associated with the data [18]. This study uses a lexicon-based approach that works by computing both positive and negative words associated with the data.

At this stage, the recent research using sentiment analysis to study user comments in social media involves several social media platforms such as youtube, Instagram, etc. [17], based on the automatic process of finding useful videos using sentiment analysis of user comments with natural language processing. They were using, e.g., the Nave Bayes algorithm and testing it for different scenarios, and comparing the ratio of training and testing data and the accuracy [19]. Event classification and prediction of YOUTUBE comments for comment polarity are also discussed [20].

However, there are few studies on body image using sentiment analysis, and there have been studies on body image in the context of Tiktok, Facebook, and Instagram. Few studies have been conducted on the local Chinese social media platform Xiaohongshu. This study can fill the gap in the performance of users' comments on plus-size women's clothing bloggers in Chinese social media and aims to verify whether the content of plus-size women's clothing bloggers' blog posts can cause users' body acceptance and body positivity.

3   Method

To answer the research question proposed above, this study collected data from the Xiaohongshu app and followed three steps for data collecting and analyzing.

Step 1 Data Collection

This paper collected comments from the top 10 plus-size women's clothes blog posts on Xiaohongshu based on the total number of "likes" as of the date February 24, 2023. Specifically, this study used Python software as the web crawler to collect data. A total

of 11255 comments were collected, including first-level comments, i.e., comments on blog posts, and second-level comments, including replies to comments and replies to replies.

Step 2 Data Preparation

Since the language used in Xiaohongshu is Chinese, the language used in the comments is almost all in Chinese, which is not conducive to the language cloud analysis of MaxQDA. This study used Google Translate to translate its excel data file into English. In order to verify the accuracy of its computer translation, the research chose stratified sampling, set the content of 11255 translated comments as the sample overall (N=11255), the sample size is 113 translated comments (n=113), so the sample proportion is n/N=0.01. According to the numbering order in excel, every 100 comments is a layer. One translated comment was randomly selected in each layer and compared with the pre-translation comments for content accuracy. The correct translation rate of the sample test conclusion was 89.873%, and it was also verified that 25% of the translation errors were of the same type. The original meaning of the content was rough "whether the model is the same person," but the wrong translation was "whether the model is a person." However, since the Chinese in the original sentence does have different semantic interpretations because the Chinese word "model is not a person" can be interpreted as "model is not a human being" and "model is not the same person," this type of translation is defined as not an error but the differences between subjective interpretation. The correct translation rate after eliminating subjective understanding is 92.405%, this accuracy is still not ideal, and this study chose to manually check each translation to achieve accurate findings.

Step 3 Data Analysis

To analyze the sentiment tendencies, this study used MaxQDA to import all the comments after calibration into the code. The minimum frequency of occurrence of words was set as 50, excluding the filler words that do not carry clear meaning (such as the, and), a total of 111 keywords were aggregated, and the keywords were classified into three categories through the lexicon-based approach, namely, clothing purchase words with no tendency, emoji with positive tendency, and personal emotion words with positive and negative tendencies, respectively. To determine the purpose and emotional tendency of comments in the comment section of plus-size women's blog posts.

To better understand the emotions embedded in these comments, whether being manifest or latent, this study first investigated the emoji uses in the comments, as users emojis are the defective ways internet users choose to compensate for lack of face-to-face interaction [21].

Next, in order to better know the focus of users' attention while viewing the content of the blog post, this study investigated the types of clothes mentioned by users as well as the adjectives for clothing. Selective perception is the process by which individuals perceive what they want in a media message while ignoring opposing viewpoints [22], so users' comments will tend to mention what they are interested in.

To better understand the sentiment tendencies in the comment section, this study will examine person-based adjectives and epithets and use a lexicon-based approach to categorize such words as positive, negative, and non-directive to better understand the user's atmosphere when communicating.
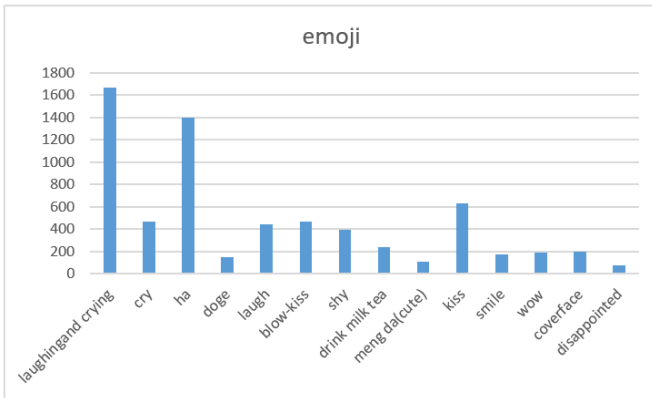
4   Results

Fig. 1. The commentary atmosphere is shaped by emojis

As shown in Fig. 1, the most frequently seen emoji in the comment section is "laughing and crying." It is the most popular emoji in the world and China. It can be used in a wide range of situations because it can express many emotions, such as happiness, self-deprecation, sarcasm, goodwill, and softness. Also, considering the frequency of each emoji, it can be seen that people in the comment section generally formed a harmonious, polite, and friendly chatting atmosphere, filled with some humor and wit (including doge and cover face), and only one disappointed among the 13 emojis was negative, so we can tell that the blog post triggered a positive reaction from users.
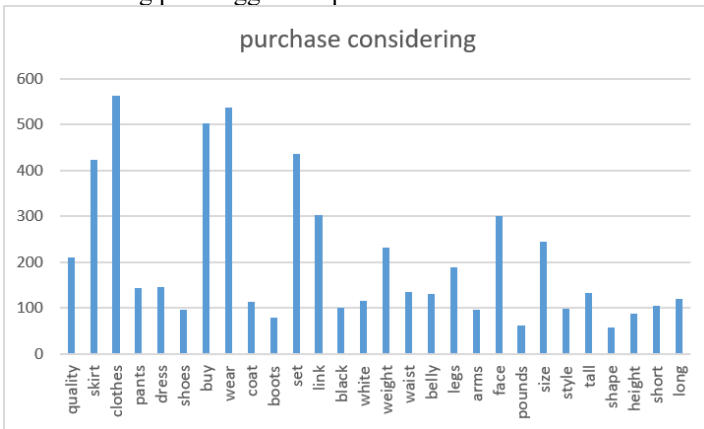

Fig. 2. For comments on the purchase of clothes

These discussions were summarized into two types, one is for the consideration of clothes, and the other is for the consideration of personal body shape. As shown in Fig. 2, for clothes, users are most interested in plus-size women's skirts, while pants, jackets, and shoes have the same degrees of interest, while users are also very concerned about clothing color. Compared with the price, users are more concerned about the quality, and even the price is discussed less often than 50 times. In terms of personal shape, users are very interested and highly differentiated parts. Not only did users mention overall height and weight, but they also divided up every measurable part of the body in detail. Among them, a body part that seems unrelated to plus-size women's clothing, the face, appeared 301 times, while specific body parts, such as the waist, stomach, legs, etc., all appeared more than 100 times. From these keywords, it can be inferred that users are conscious of having accurate predictions and estimates of their body shape.
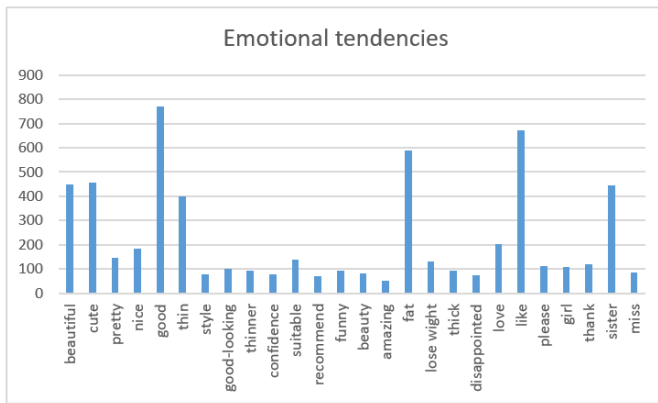

Fig. 3. Analysis of words with sentimental meaning in the comments section

As shown in Fig. 3, most of the adjectives in the comments section have a clear emotional tendency, including beautiful, cute, pretty, nice, good-looking, love, like, etc., all of which have a clear positive emotional tendency as compliments for the blog posts. These positive words form a community culture of plus-size women bloggers who choose to appreciate and praise the content of plus-size women bloggers' blogs and communicate positively without hesitating to use intimate words such as love and sister. The emotional tendency of the two frequently appearing adjectives needs to be clarified: fat and thin. As the opposite of words describing the body, the emotional tendency here must be analyzed in the context of the specific comments. In comments about Fat, Fat does not have a clear emotional tendency but is more like a description. For example, "I am black and fat, I want the author to help me match a set" means that the user has a clear perception and acceptance of his body shape, does not resist the mention of fat words, and is very open to using Fat to join the community conversation. At the same time, some of the Fat has a slightly negative sentiment, but the comments are often transitive, such as "Maybe fat people want to be thinner, and thinner people want to be thinner; your words surprised me, and I began to reflect. I hope you will always be happy like this [Blow Kiss R]. "*Fat* " is a negative word, but users borrow

Fat to set off some positive emotions. Unlike Fat, most thin words appear with a positive sentiment. Users are happy to use thin to describe their body shape, such as "My friend said that I look super thin in her pants, and a pair of pants is only over. This part of the user represents their fashion quest for plus size women's clothing is not a choice to accept their real body shape, but rather a desire for fashion to make their body look thin in order to look beautiful and pretty. The blogger's blog content also reflects this part of the philosophy: "looks thinness."

5   Conclusion

The semantics of the comment section shows a very positive trend of emotions in general. Users choose to visualize their emotions with expressions like laughing and crying while focusing on improving the accuracy of their body estimation and reference, accepting the fat body frankly but still expecting to become thinner, "lose weight," or "look thinner." "look thinner." However, there is no denying that the blog post on plus-size women's clothing significantly impacts the accuracy of an individual's body size estimation; and the attitudes/feelings an individual has towards their own body. Users are happy to talk about their body size and praise plus-size and fat girls, so this study concludes that the content of plus-size women's clothing bloggers' blog posts can help users to create a positive body image in terms of body shape and aesthetics.

5.1   Limitation

However, whether the content of "looks thinness" blogs improves users' acceptance of plus-size body image or whether the content of these blogs shows users the idea that "clothes cover up flaws" rather than the idea that they like their curvy bodies, this part of the study still needs further research. Body image still needs to be further investigated.

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