A Comparative Analysis of Emotional Responses to Government's Anti-Panic Buying Advocacy on Weibo: V Users vs. Non-V Users

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Abstract: This research paper delves into the contrasting responses of verified (V) users, also known as influencers, and non-verified (non-V) users on the Chinese social media platform Weibo about media reports addressing the government's call against panic-buying medication during the COVID-19 pandemic. Using a robust dataset of over 1,500 comments from various media outlets, the study employs content analysis and quantitative methods to uncover the distinct attitudes, emotions, and reasoning behind the viewpoints of these two user groups. The research indicates that V users offer calm, rational, and objective responses, focusing on guiding public discourse and fostering trust in the government's recommendations. In contrast, non-V users exhibit a broader range of emotional expressions, including panic, anger, and ridicule, which can exacerbate anxiety and potentially drive panic buying. The study also acknowledges challenges in cross-cultural emotion analysis and suggests prioritizing natural translation over rigid literal translations. The findings provide insights into the roles of emotions, rationality, and cultural nuances in shaping online discussions and public behavior, paving the way for further exploration of user responses in different contexts and topics.

Keywords: Panic Buying, Weibo, Emotion, Influencers

1. Introduction

The outbreak of a new coronavirus has brought unprecedented fear and uncertainty to the world. As the outbreak spreads rapidly, countries face increasing challenges in containing the virus and providing essential medical supplies to their citizens. In the face of this uncertainty, individuals are turning to online platforms to express concerns, share information, and seek comfort from their collective digital communities. Among these, Weibo, China's leading social media platform, became the central hub for real-time updates, news dissemination, and public discussion during the outbreak.

During the pandemic, the Chinese government had consistently imposed restrictions on individual medication purchases until December 2022, when provincial and municipal governments lifted the restrictions. As a result, people were finally allowed to purchase medication freely. On December 7th, during a press conference held by the State Council's Joint Prevention and Control Mechanism, the National Health Commission of China issued a reminder that hoarding and panic-buying of medication are unnecessary. With the comprehensive deployment of measures, there is an abundant

supply of medicines in retail outlets and medical institutions. Many media outlets reported on the government's advocacy, urging the masses to refrain from panic-buying the drug. These reports triggered a frenzy among the public, leading to a flood of comments on Weibo from users of different backgrounds and beliefs.

This research paper aims to examine in-depth the comments of two different groups of Weibo "V" users and non-"" V" users to elucidate their views on Weibo and their different perceptions of the drug-grabbing phenomenon during the epidemic. Sina Weibo's "V" users refer to individuals or enterprises who have undergone personal identity verification by Sina Weibo, a prominent social media platform in China. The "V" certification greatly enhances their credibility; they are expected to be responsible for their words and actions on the forum. Generally, individuals or experts with a certain level of fame or influence and reputable companies find it relatively easier to apply for "V" status. However, personal applications are also permitted if specific criteria are met, although Sina Weibo's verification process is currently rigorous.

"V" users are divided into two categories: personal accounts and enterprise accounts. Enterprise accounts usually represent official and authoritative sources, and the content they publish should be genuine, well-founded, timely, and subject to verification. The verification subject is responsible for the authenticity of the content they post, and they are held accountable for any false statements, subject to legal constraints and platform supervision. This article focuses on individual "V" users whose opinions solely represent the blogger's views. The content they publish is only related to the blogger's stance, and the integrity of their publications requires further examination. The application for individual "V" user certification can be categorized into professional verification and interest verification. Professional verification involves the submission of company business licenses and proof of current employment (stamped with an official seal). Interest verification requires meeting the following criteria:

1. Having at least 1,000 followers.
2. Publishing at least 30 posts in the last 30 days.
3. Receiving over 50,000 reads on posts in the last 30 days.
4. We are aligning with Weibo's designated fields of interest.

This research paper utilizes quantitative statistical methods to conduct a content analysis of comment sections on the Sina Weibo platform in response to news articles and posts from different media outlets that advocate against panic medication purchases as advised by the government and experts. The objective is to categorize and compare comments made by certified and non-certified users (V users), aiming to gain insights into how these two groups respond differently to such warnings.

2. Literature Review

With the popularity of the internet, social media platforms like Weibo have become crucial for accessing information and expressing viewpoints. According to the "2022 Weibo User Development Report," the platform has reached 586 million monthly active users, with over 600,000 verified users (Big Vs). Scholars have conducted research on the credibility of verified users, such as *Does Being Verified Make You More Credible? on Twitter* [1]. They found that users can distinguish authenticity and credibility for unfamiliar accounts, and authenticity indicators do not significantly impact users' willingness to share or act based on tweets. Another study, *An Analysis of the Characteristics of Verified Twitter Users* [2], revealed characteristics of verified Twitter users that gain users' trust. Now, our focus shifts to Weibo to explore potential differences in the information posted by verified and non-verified users on this platform.

Since COVID-19, numerous scholars have conducted extensive research on panic buying. The study *Panic Buying Research: A Systematic Literature Review and Future Research Agenda* [3]

reviewed 53 relevant studies from 1990 to 2020, highlighting the lack of consistent understanding and established consumer behavior theories. They contribute theoretical, contextual, and methodological insights and propose a research agenda. Some articles investigate the reasons for panic buying as observed on online media during the initial stages of the pandemic. For example, the article *Responsible Factors of Panic Buying: An Observation from Online Media Reports* [4] analyzed 784 media reports and identified factors contributing to panic buying, including scarcity, increased demand, price anticipation, COVID-19 impact, rumors, psychological factors, social learning, trust, and past experiences. In 2022, as the COVID-19 pandemic approached its end, the Chinese government gradually lifted many restrictions. However, panic buying resurfaced as a social issue. Many research studies have analyzed this phenomenon. The article *Study on The Mechanism Of Panic Buying Under Omicron Virus Impact* [5] surveyed 208 participants and found that group factors and individual anxiety significantly influenced panic buying during the COVID-19 pandemic. Government control impacted panic buying through group factors and personal anxiety mediation. It provides insights into guiding government control during public crises and addressing market risks caused by scarcity. However, this article collected a survey sample of only about two hundred. These data may not represent the entire or general population well, leading to limited generalizability and external validity of the research results to an enormous scope. The findings may be influenced by sample variability and randomness, thus failing to reflect the actual situation. The sample size needs to be revised to support significant testing of observed effects, and the conclusions may be at risk of bias, resulting in a lack of reliability and consistency in the research results. The researcher opted for a data-driven approach to avoid the potential issues that may arise from a questionnaire survey.

Currently, numerous studies on the information posted by users on social media offer us various research perspectives. The study *Sentimental Analysis of Twitter Comments on Covid-19* [6] focused on sentiment analysis of over 370 tweets from Twitter. The study concentrated on three keywords related to the COVID-19 pandemic: COVID-19, CORONA VIRUS, and COVID-19. The study's main objective was to differentiate between subjective and objective sentences in the tweets. No further action was taken for accurate sentences, while the polarity (positive, negative, or neutral) was determined for emotional sentences. The article does not clearly explain how they analyzed the polarity of these tweets, and they did not provide a specific evaluation criterion. Additionally, the report does not clarify how they distinguished between subjective and objective comments. Another article *Sentiment Analysis of Twitter about COVID-19 Disease during Pandemic* [7] used the NRC method to analyze users' emotions. NRC method uses a word lexicon with eight emotions & 2 sentiments (polarity), creating a binary table by annotating words in a chosen language. Word counts determine the idea: more positive comments = positive feeling, more negative words = negative emotion, and equal positive/negative words = neutral sentiment. Neutral tweets show NRC's sentiment inability. The NRC method relies on a pre-constructed lexicon, which means it can only recognize emotions and sentiment polarities present in the lexicon. However, it may fail to capture specific emotions related to emerging or domain-specific vocabulary not included in the lexicon.

Additionally, the NRC method calculates the count of emotional words without considering their intensity.

Consequently, expressive words with varying degrees of strength might not be appropriately accounted for. The NRC method categorizes emotions into positive, negative, and neutral. Still, neutral feelings can have varying emotional inclinations, and this simplistic binary classification may not capture more nuanced dynamic variations. Researchers have proposed updated approaches to address the limitations of the binary algorithm of the NRC method and to analyze emotions in a more diverse and nuanced manner. A study *Food insufficiency and Twitter emotions during a pandemic* [8] utilized the GoEmotion dataset, which contains seven possible labels that the model learned to detect: anger, disgust, fear, joy, sadness, surprise, or neutral. Examples of records and their corresponding

emotion labels were provided. Additionally, an analysis of emoticons in the tweets was conducted, where tweets containing ":)" were labeled as positive, and tweets containing ":(" were labeled as unfavorable. However, the GoEmotion dataset primarily focuses on English sentences, limiting its applicability to other languages and making it less suitable for Chinese language analysis. Additionally, certain emotions in the GoEmotion dataset have significantly more instances than others, leading to imbalanced data that can affect the performance of emotion classification models and potentially result in biased outcomes. The dataset may not cover all domains and scenarios, which could restrict the generalizability of emotion models to real-world language analysis. Nevertheless, the researcher still referred to the emotion classification methods and emoticon analysis techniques from the GoEmotion dataset.

Question:

Is the reaction of V users (influencers or verified accounts) and non-V users (non-influencers) the same regarding media reports on the government's call not to panic-buy medicine on Weibo?

3. Methods

Data Collection: To obtain analytical data, the researcher utilized a web page full-capture screenshot tool (thus avoiding detection and interception by anti-web scraping measures on Weibo) to collect comments from the discussion sections of news articles advocating against panic-buying of drugs during the COVID-19 pandemic, as reported by the government and experts. The articles will be selected based on the number of comments they have received. Finally, the researcher chose People's Daily, CCTV News, Qian Jiang Evening News, Sina Finance, and NEWSCHINA.

Content Analysis: The collected comments will undergo content analysis, wherein the text will be systematically examined to identify popular themes and viewpoints expressed by Weibo users. The words will be categorized based on:

Understanding and Compliance: Some people will comprehend the government's appeal, follow the guidelines, and realize the negative consequences of panic buying, refraining from hoarding excessive supplies.

Suspicion and Distrust: Others may question the government's appeal, hold a skeptical view of the information, or engage in panic buying driven by emotions and media reports.

● Emotions conveyed (Angry, Fear, Worried, Sarcasm or Cynical, No feeling)

● Reasons behind their stance (Personal and Family Needs, Government and Experts, Pharmaceutical Companies, Society and Public Interest, No specific reason).

Table 1: Sample of Emotions

Angry	有日子不好好过:回复@比尔斯凯奇:你真幼稚，这些药都是谁诱导买的？怎么会铺天盖地的专家都出来了！ 22-12-7 23:54 来自安徽 You are so naive. Who is encouraging people to buy all these medications?! Why have so many experts suddenly appeared?!
Fear	小沫青青鸟:你觉得这次跟非典一样吗？我觉得大家都躲不过了😭 22-12-7 02:20 来自天津 Do you think this is similar to SARS? I feel like nobody can escape it.

Table 1: (continued)

Worried	雪人爱晒太阳 :我邻居现在就有阳了居家的，我们表示很慌，但也没办法，屯药以备不时之需 22-12-7 10:34 来自吉林 My neighbor has been infected with COVID-19 and is in home isolation. I am feeling very anxious now, and I have no choice but to buy medication as soon as possible.
Sarcasm or Cynicism	hi11:就是喜欢囤，药品是有有效期的，囤到最后都扔掉。有些人估计03年非典期间囤的盐还没吃完，11年福岛海啸时囤的酱油也还没吃完 22-12-7 00:15 来自浙江　　　　　　　　　　　46 Some people just enjoy panic buying medications, but medicines do have expiration dates, and purchasing excessive amounts must lead to wastage! For instance, some individuals still have salt purchased during the SARS outbreak 2003 or soy sauce bought during the Fukushima tsunami 2011, and they haven't finished using it yet.
No emotion	ZHOUTAO001:别排队买药了，，，， 22-12-9 21:28 来自北京 Don't panic buying.

Table 2: Sample of Reasons

Personal and Family needs	公羊洛:我家买了两盒太少了 全家五口人都高烧39度多 22-12-7 23:47 来自河南　　　　　　　　　　5 I bought only two boxes of medicine, and it's not enough. The family of five people has a high fever of 39 degrees Celsius.
Government and Experts	zz54183:等几天就好了，国家肯定做了准备的 22-12-7 23:42 来自湖北　　　　　　　　5 silencemoom 等人　共2条回复 ▼ It will be fine in a few days; the country must have prepared.
Pharmaceutical Companies	论在西安 :#多款感冒药卖断货# 发财了，饥饿营销套路开始了，核酸财发完了，该药财了，下一步是什么，能不能利索点，一道一道割肉太™疼了😭😭😭😭😭😭😭😭😭😭😭😭😭😭😭 22-12-8 00:21 来自陕西　　　　　　　　12 They're making a fortune! The hunger marketing strategy has started. The nucleic acid testing companies have already struck gold; now it's the pharmaceutical companies' turn to make a fortune!
Society and Public Interest	刺猬小姐刺不扎人的:小白鼠们能不能别囤药了，给真的生病的人留点 22-12-7 23:31 来自北京　　　　　　　　8 Could you please refrain from panic-buying medications? Leave some medicine for those who are genuinely ill.

Table 2: (continued)

No specific reason	跟着老公去旅游:没囤药的在这里 22-12-9 23:33 来自广东 I am not hoarding medicine. 学医救不了田园女拳:抢吧，快抢 22-12-10 02:04 来自北京 Go ahead, grab it quickly.

1.   Quantitative Analysis: Using statistical tools to quantify the frequency and distribution of comments within each category.

2.   Comparative Study: A comparison will be conducted between the statistical results obtained from verified users (V users) and non-verified users to determine potential differences in their reactions to government and expert guidelines on panic-buying of drugs. The researcher will explore factors influencing these differences, such as government support, perceived credibility, and social influence.

4.   Findings

The researcher has discovered many comments that lack practical utility. These comments do not reflect people's attitudes towards panic buying of medication or acknowledge the information. These types of words can be classified into two categories: one is irrelevant information, and the other consists of content utterly unrelated to panic buying. Therefore, the researcher has excluded these comments.

Unrelated Comments:

People Daily:153(34% of total comments) CCTV News: 224(42%) QianJiang Evening News: 81(21%)   Sina Finance: 135(31%)   NEWSCHINA: 38(12%)

In the end, the researcher collected three hundred valid comments from the comment sections of each media source.

The researcher has excluded the data from CCTV News and the People's Daily because they cannot provide us with enough valid information to distinguish the differences between comments from V users and non-V users:

The researcher has found that most comments in the People's Daily and CCTV News comment sections are emotionless. Specifically, 95% of the words in the People's Daily are emotionless, while 75% of the comments in CCTV News lack emotions (Figure 1).

People's Daily

8, 2%   2, 1%
                6, 2%

284, 95%

■ Angry ■ Fear ■ Worried ■ No Emotion

CCTV News

35, 12%   10, 3%

30, 10%

225, 75%

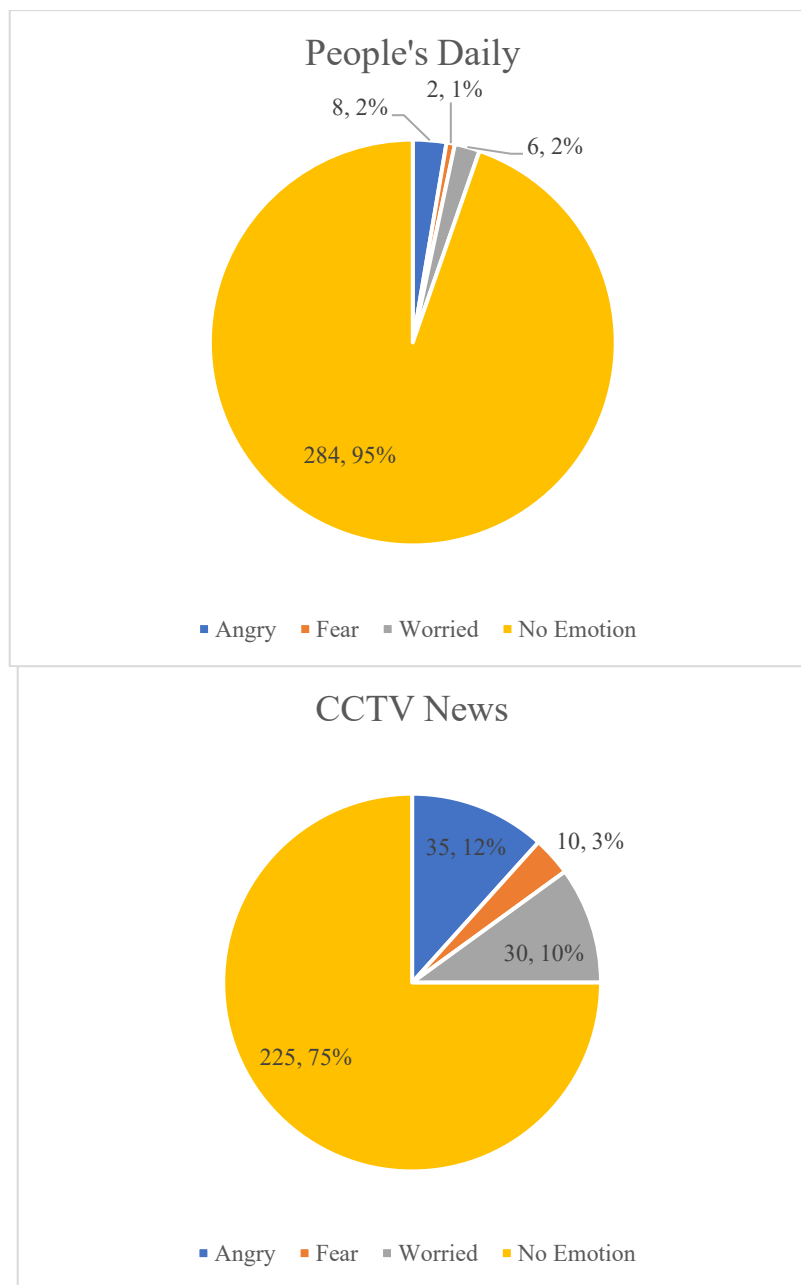■ Angry ■ Fear ■ Worried ■ No Emotion

Figure 1: Emotions in Comments

In addition, the researcher found that most comments in the People's Daily and CCTV News do not express the reasons for their support or opposition to panic buying. Specifically, 94% of the words in the People's Daily lack reasons, while 70% of the comments in CCTV News do not offer any justifications (Figure 2).
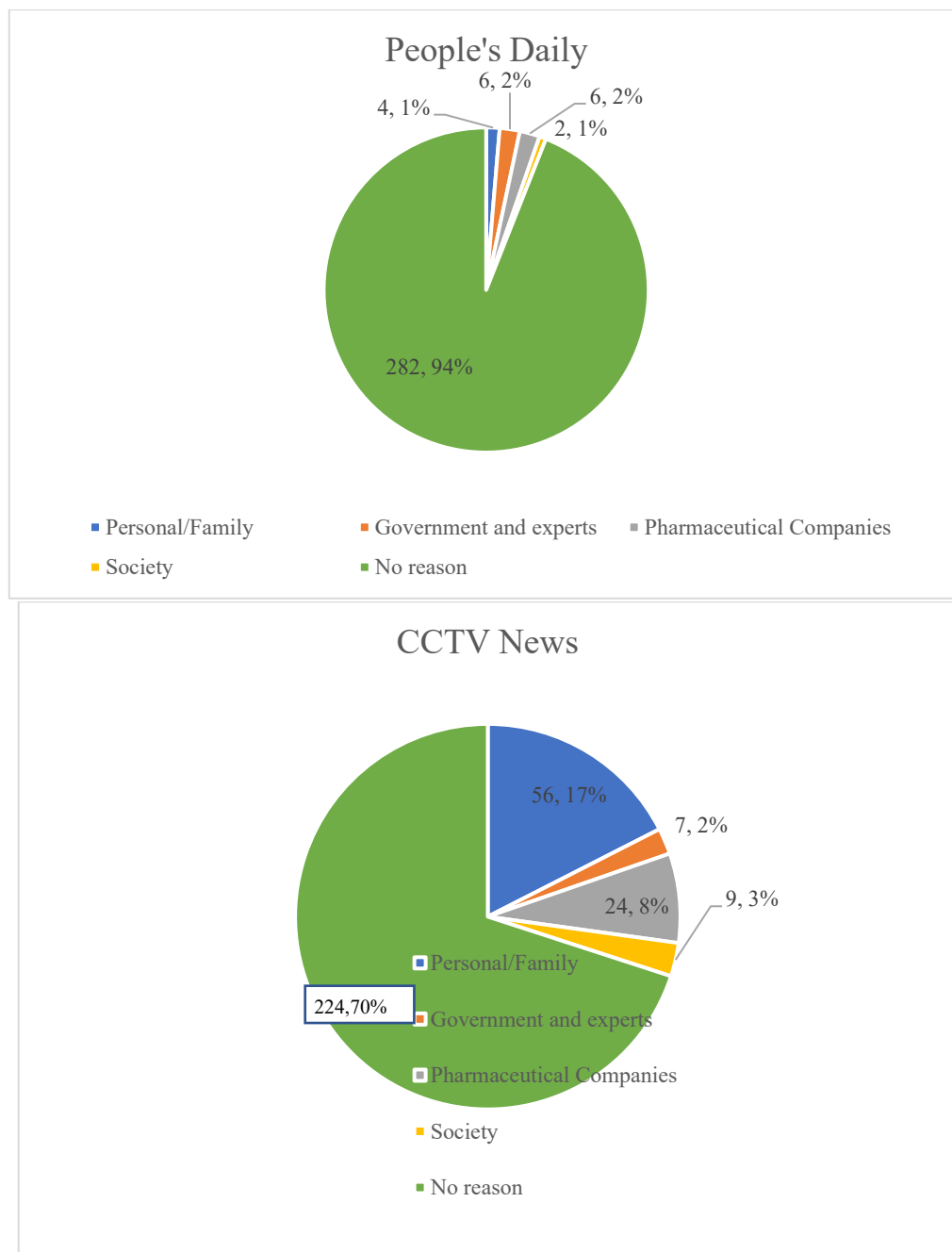
Figure 2: Reasons in comments

Most V users are interest-certified accounts, primarily in the entertainment field. Other certified funds, including personal and enterprise accounts, have too few, generally not exceeding ten posts each. Therefore, the researcher has excluded them from the analysis.

The researcher has determined the proportion of verified users (entertainment) and non-verified users in the comment sections of the remaining three media outlets (Figure 3).
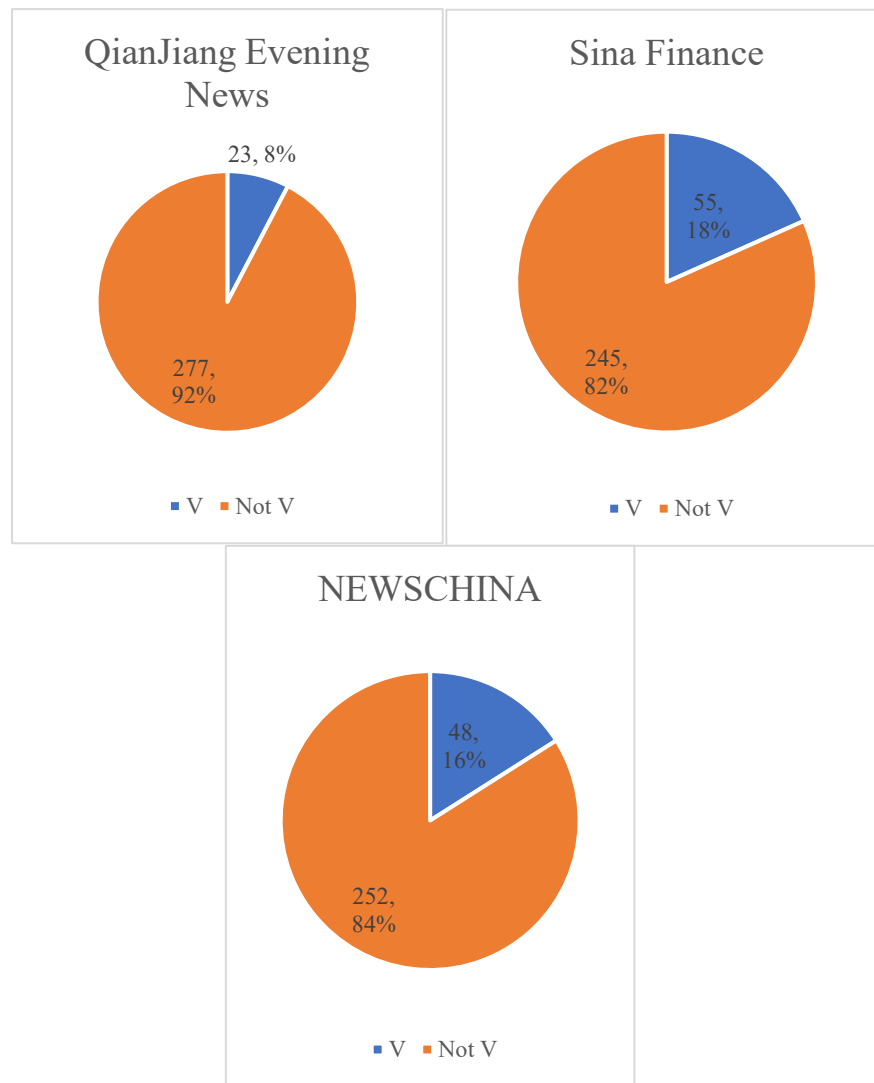
Figure 3: Proportion of V users

The researcher found that most V users understand and support the government's call not to panic-buy medicine, and they also urge people not to engage in panic-buying. However, more than half of regular users express doubt and mistrust towards the government's advocacy. They believe that panic-buying of medicine is necessary (Figure 4).
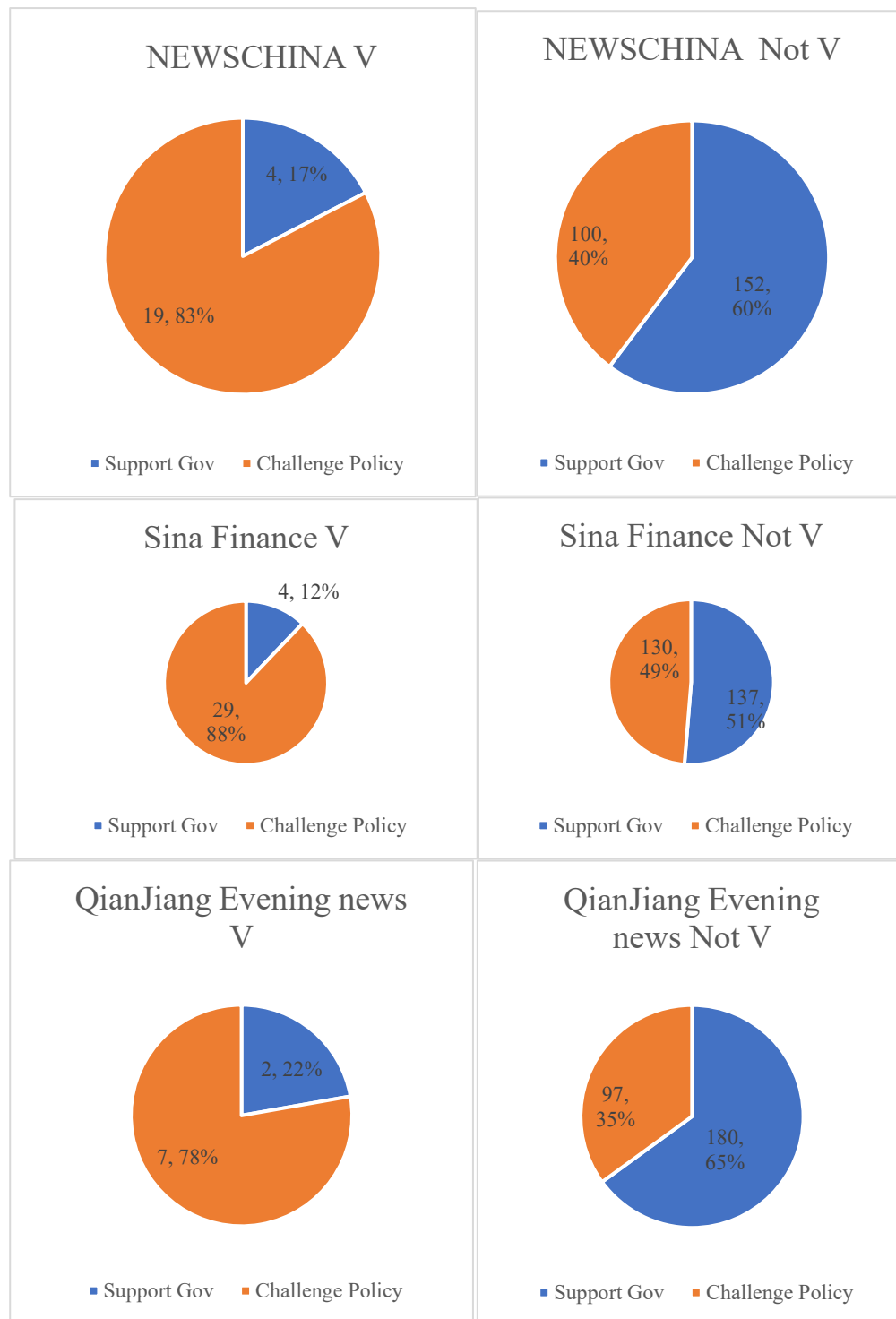
Figure 4: Attitude of Comments

The researcher has observed that the comments from V users are primarily emotionless. In contrast, the remarks of non-V users are emotional, and the researcher can see a wide range of emotions expressed in their comments (Figure 5).
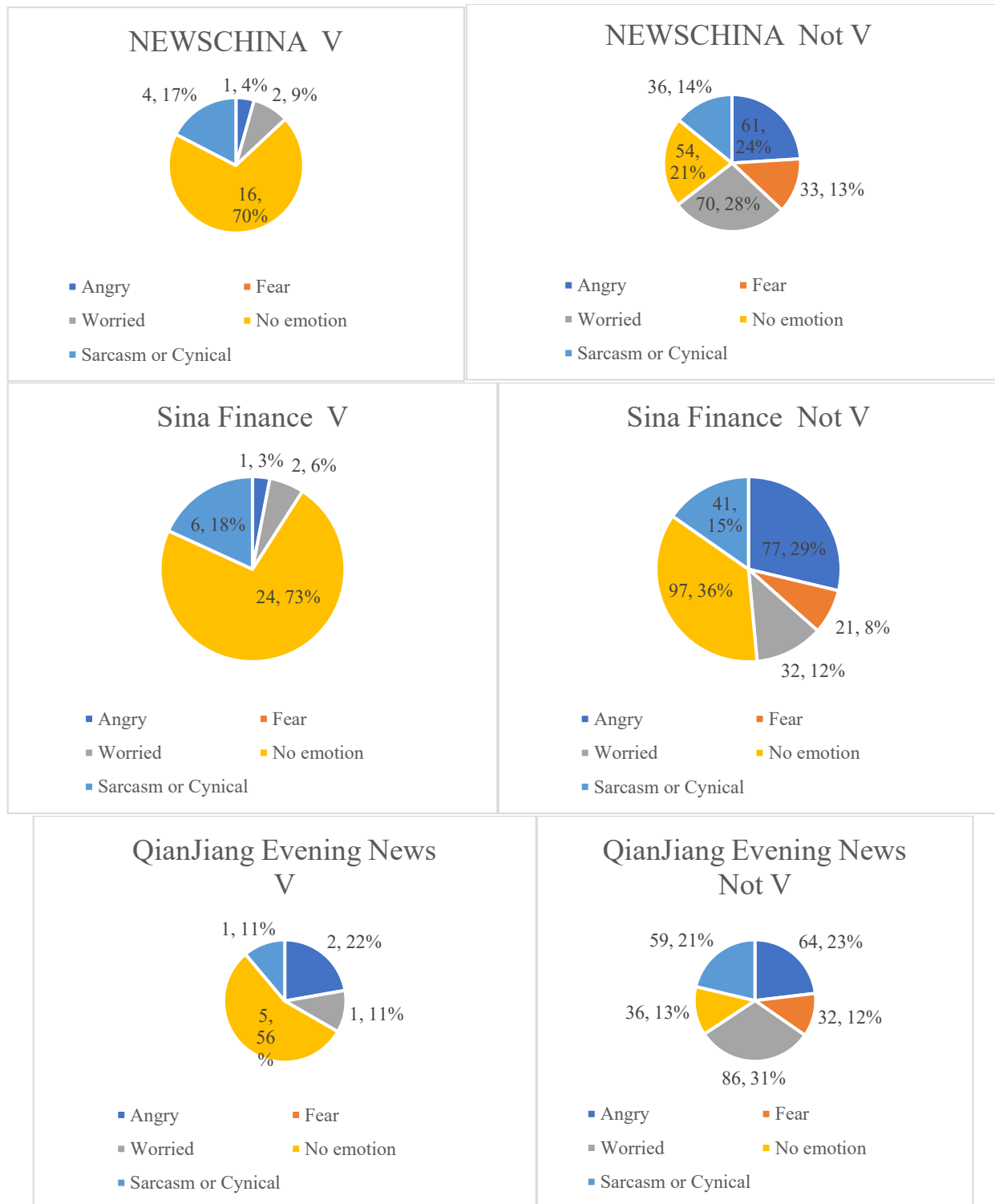
Figure 5: Emotions in Comments

The researcher found that both V and non-V users provided rich reasons in their comments. The proportions of different categories of reasons in these comments are similar, and some words offer multiple perspectives and reasons (Figure 6).
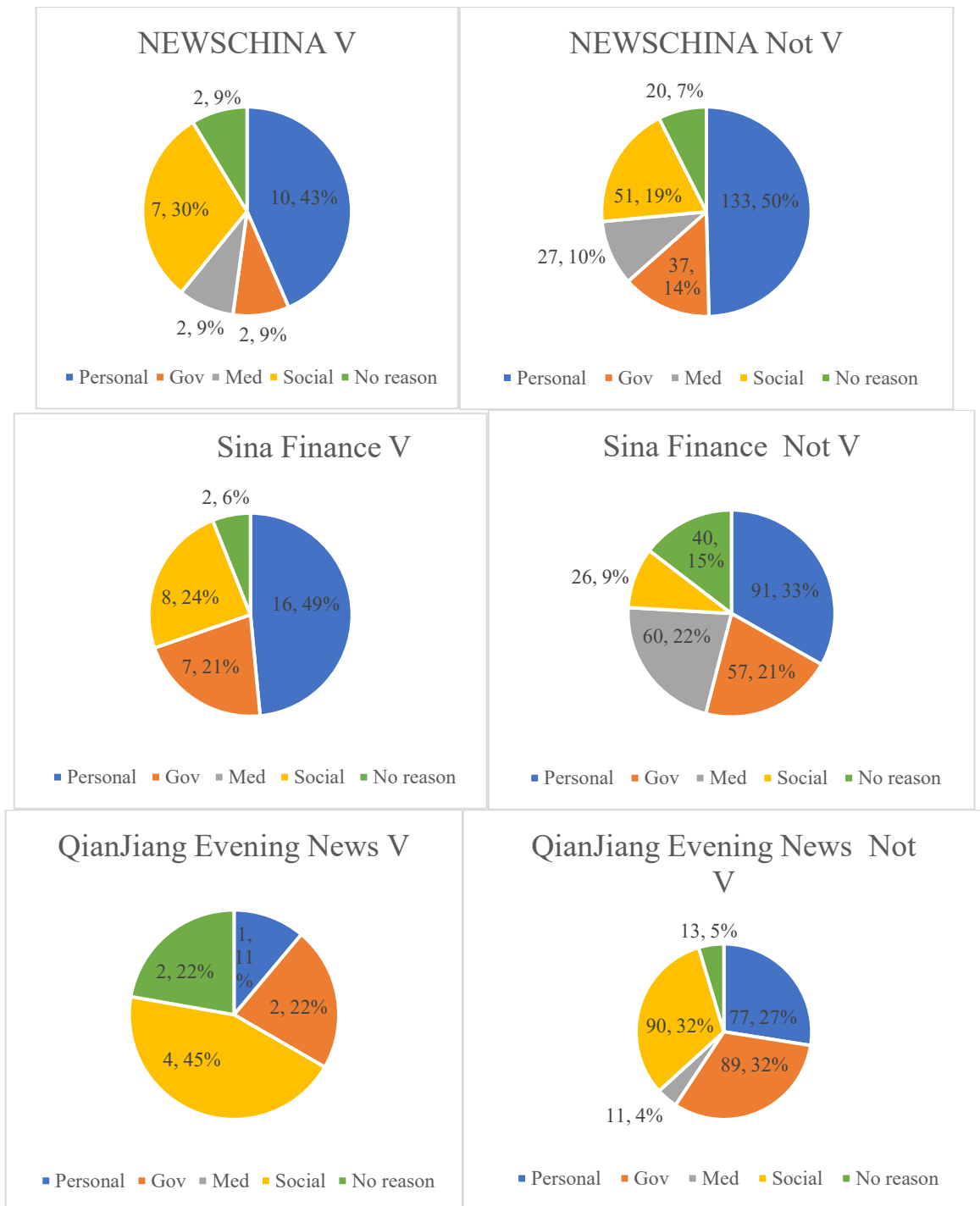
Figure 6: Reasons in comments

In summary, most comments from verified accounts (V accounts) can provide comprehensive and detailed reasons without personal emotions, advocating people not to engage in panic buying. On the other hand, comments from non-verified accounts, while presenting reasons either supporting or opposing panic buying, are accompanied by various emotions. They express panic, anger, and even ridicule towards others.

5. Discussion

The researcher believes that V users maintain a calm and dispassionate approach when expressing their views to avoid appearing biased. By doing so, they can present their comments with greater objectivity, inquiry, and rationality. Moreover, they may seek to be opinion leaders, guiding public discourse toward fostering trust in the government and alleviating social anxiety. However, although most V users encourage people to refrain from panic buying in their comments, many regular users in the comment section still express their intention to buy. One reason the researcher believes people support panic buying is due to the strong emotions ordinary users display in their comments, such as anger, fear, and ridicule towards others. These authentic emotions elicit empathy and exacerbate people's anxiety, leading them to resort to panic buying. In summary, if V users wish to exert their role as opinion leaders and have their comments widely influence people's perspectives, they should appropriately add some emotions when expressing their opinions. After all, humans are not cold machines but emotional beings.

Subsequent researchers can continue their investigations by conducting comparative studies to examine the efficacy of rational appeals versus emotional appeals by V users, revealing which approach is more persuasive and ethically influential in guiding public behavior. Additionally, analyzing the patterns of engagement and interaction between V users and regular users can unveil how emotional appeals stimulate dialogues and influence the overall sentiment within online communities.

Exploring the impact of different cultural and societal factors on emotional expressions is also crucial. After all, diverse V users and regular users may be influenced by their cultural environments, leading to distinct emotional norms and behaviors that could affect the effectiveness of emotional appeals. By delving deeper into these areas, researchers can understand the role emotions play in shaping public opinion and behavior on social media platforms like V. Such knowledge can inform strategies for responsible online communication and help foster a constructive online environment.

Moreover, investigating the ethical implications of emotionally charged appeals in shaping public behavior is essential to ensure users' well-being and ethical conduct in the digital space. Understanding the dynamic interplay between rational and emotional appeals and their varying effects across cultures and societies can provide valuable insights into designing effective communication strategies that promote positive outcomes and foster trust among online communities.

6. Conclusion

The researcher analyzed over 1,500 Weibo comments from verified (V) and non-verified (non-V) users. The relatively large sample size significantly reduces sampling errors. It allows us to encompass a broader range of variations and differences, providing a more comprehensive representation of both groups' commenting characteristics and trends. As a result, our research findings are relatively more reliable, stable, and representative. This enhances the significance and general applicability of our conclusions. With a robust dataset, our study holds more significant weight in contributing meaningful insights into the differences between V and non-V users' commenting behaviors and attitudes on the platform.

Humans naturally have rich emotional cognition and understanding, enabling us to recognize and comprehend complex emotional expressions, including implicit emotions, tones, and contexts. In our analysis of emotions, the researcher considers the context and background, facilitating a better interpretation of emotional content in comments or texts, especially in complex or ambiguous emotions. As native Chinese speakers and fluent English speakers, the researcher can sense the feelings conveyed in Chinese words on Weibo. However, when the researcher translates these comments into English, the researcher finds that the translations may not fully capture the genuine

emotions the commenters are trying to express. The researcher believes that these challenges the researcher encountered are likely to be expected in other cross-cultural studies. After all, different cultures have differences, including values, customs, and beliefs. These variations may result in certain words and expressions having no exact counterparts in the target language. Based on our experience, the researcher finds it more effective to prioritize natural and fluent translation over rigidly pursuing word-for-word literal translations to convey the original text's genuine emotions and sentiments.

In our emotion analysis process, inevitable drawbacks are associated with human involvement. Firstly, different researchers may interpret and categorize the same emotional content differently, leading to inconsistent results. Secondly, conducting emotion analysis on a large volume of comments or texts can easily lead to fatigue, overlooking subtle emotions or failing to grasp the essence of emotional expressions, thus compromising the accuracy of computer-based approaches. Additionally, due to limited research resources, the researcher lacks the efficiency of computer processing and can only perform emotion analysis on samples or a subset of data, thereby being unable to cover the entirety of social media or online content.

The researchers have found that there are indeed different reactions between verified users (influencers) and non-verified users in the context of panic buying. In the future, other researchers can use our findings for further exploration to investigate whether verified users and non-verified users exhibit different responses in other topics, such as public safety issues (terrorist attacks), sudden disasters (earthquakes, tsunamis), and so on.

Acknowledgment

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