

The Influence of Media on Protecting Endangered Animals: A Case of Pandas in China

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Abstract

This paper analyzes whether endangered animals can be protected through social media, and what factors influence people's attention to endangered animal protection on social media. To answer these two questions, I compared the Baidu search index of giant pandas in the three-year period: 2019-2021 with the number of donations received by the Chengdu Giant Panda Breeding Research Foundation. The results showed that social media has effectively protected the giant pandas. I use retrospective content analysis to find 20 Weibo accounts by setting keywords and analyze Engagement metrics. It was found that "Specific animal" and "Knowledge-based" tend to increase the number of likes and comments, which can increase people's attention to endangered animals on social media. However, the sample data for both studies were too small and may be disturbed the result. From a rigorous perspective, this study emphasizes the need to take into account the larger sample data and analyze the content of comments to better understand the user's behavior intention.

Keywords: social media, giant panda, endangered animals, protection, content analysis

1. Introduction

The International Union for Conservation of Nature (IUCN) maintains the "Red List of Endangered Species." The Red List defines the severity and specific causes of the threat of extinction. The "Red List" has seven protection levels: extinct, endangered, vulnerable, extinct in the wild, data deficient, critically endangered, near concern. Each category represents a different threat level (National geographic, n.a.). According to IUCN Red List, 112,432 species were assessed, and the number of threatened species is 30,178 (IUCN Red List, 2019). It means one-third of species are threatened. The number of endangered and critically endangered species is accordingly 10,629 and 6,413 (IUCN Red List, 2019). According to the Living Planet Report 2018 of the WWF, in 40 years the populations of amphibians, fish, etc. have a reduction of 60%. Humans are lagging behind the rate of species extinction, at least 100-1,000 times higher than the extinction rate expected by nature (WWF, 2018). These data show the situation of threatened species is more serious.

According to WWF, there are five main reasons for the decline in wildlife diversity: habitat loss, population growth, pet trade, pollution and pesticides, and invasive species, overhunting and over-collecting. The transformation of man-made (human factors) and the destruction of habitat through land use are the most important reasons for the loss of biodiversity (Healing Earth, n.a.). According to Healing Earth, Habitat loss is a big reason for the decline of species and populations because it eliminates the plants and animals needed for the life of each species. The main reason for the loss of habitats on earth is agriculture and its expansion (Healing Earth, n.a.).

The results show that zoos and animation programs have made contributions to increasing public attention in animals. The spatial distribution of 92 animals in Google search volume is related to the spatial distribution of animals displayed in zoos. After the program broadcast, it showed that animals included in animation programs

received more financial support than animals not included in the program through donations (Fukano, Y., Tanaka, Y., & Soga, M, 2020).

My research will focus on some local Chinese institutions on Chinese social media and social platforms. The research will use Giant pandas' case to explore how social media contribute to the protection of endangered animals. Previous studies focus on google search volume (Yuya Fukano, Yosuke Tanaka & Masashi Soga, 2020), entertainment industry (Yuka et al., 2019). Google is a popular search engine in many countries, but Baidu is the most used search engine in China. I will focus on the Baidu index, which can reflect the Chinese people's attention to pandas. In addition, there does not exist no relevant research about the Chengdu Giant Panda Breeding Research Foundation and Baidu Index.

Pervious study has proved that the media can increase people's attention to animal cruelty and strengthen relevant legislation. (Carpenter, A. F, & Song, W, 2016). Previous studies have also shown that animal-related anthropomorphic programs can to a large extent arouse widespread audience attention, such as the TV series *Lassi*, Disney movies. (Cartmill 1993; Payne 1995; Mitman 1999). At the same time, there is a lack of research on whether it is possible to obtain people's attention by setting up endangered animal images in movies, TV series, and novels, to better protect specific endangered animals.

To fill these gaps, this study compared the search volume of Baidu with the donation data of the Chengdu Giant Panda Breeding Research Foundation and investigated whether news and other publicity on social media helped people make more donations and played a role in protecting animals.

Since there is currently no specific study on the relationship between the protection of giant pandas and the social media, I will take the giant pandas as an example to specifically study the relationship between the media and the protection of endangered animals. I will study the setting of specific endangered animal roles to gain public attention and increase people's love.

The aim of this research is to explore how social media contribute to the protection of endangered animals through studying a case of Giant pandas. To explore this, this research set two research questions.

RQ1: Does the social media effectively protect the Giant pandas?

RQ2: What factors influence people's attention to endangered animals on social media?

Based on literature view, there are two hypotheses set corresponding to the research questions.

Hypothesis 1: Through media can attract people's attention, and people will make more donations to Giant pandas, which will effectively protect the Giant pandas. Based on literature survey, the results show that both zoos and animation programs have made symbolic contributions to increasing public interest in animals (Yuya Fukano, Yosuke Tanaka & Masashi Soga, 2020). The more prominent influence of the media is partly due to the increasing influence of the media on modern society, and partly because animal rights organizations choose mass communication as the main strategy to achieve their animal liberation goals (Unti, B, & Rowan, A.N, 2001).

An important part of successful biodiversity conservation is to raise public interest in threatened species and carry out conservation activities. Yuya Fukano, Yosuke Tanaka, Masashi Soga (2020) found results show that both zoos and animation programs have made momentous contributions to increasing public interest in animals. After the original broadcast of the program, it showed that animals included in animation programs received more financial support through donations than animals that were not included (Yuya Fukano, Yosuke Tanaka & Masashi Soga, 2020).

According to Jones (1996), the more prominent influence of the media is partly due to the increasing influence of the media on modern society, and partly because animal rights organizations choose mass communication as the main strategy to achieve their animal liberation goals (Jones, D. M, 1996). Since the Animal Foundation sponsored the anti-fur appeal, animal rights organizations and animal welfare organizations have frequently used celebrity recommendations (Jones, D. M, 1997). For example, in 2006, WildAid used Yao Ming to spread awareness about the consumption of shark fin soup in China. Since then, the consumption and sales of shark fin have fallen sharply (Carpenter, A. F, & Song, W, 2016).



Figure 1. Yao Ming campaign against shark fin consumption, Beijing, June 15, 2008. CREDIT: Shizhao (<https://www.flickr.com/photos/shizhao/3243332131>)

Animal rights advocates succeeded in attracting people's attention to animals through their true portrayal of suffering (Jones, D. M., 1997). The TV series "Lassi", Disney movies and other animal-related programs were attracted to a large extent by anthropomorphism, which attracted widespread attention from the audience and formed the public's attitude towards animals (Cartmill 1993; Payne 1995; Mitman 1999). The more prominent influence of the media is partly due to the increasing influence of the media on modern society, and partly because animal rights organizations choose mass communication as the main strategy to achieve their animal liberation goals (Unti, B., & Rowan, A.N., 2001). Jones's (1997) studies have shown that clearly portraying animal suffering through visual media can inspire listeners to act on behalf of the animal.

Hypothesis 2: Weibo posts with content related to specific animals and knowledge sharing can gain more attention from people.

Social media has helped India's animal welfare movement grow and develop in many ways. In today's modern technology era, social media is a huge tool and promoter of animal welfare activities in India, from publicity activities to highlighting cases of animal cruelty (Humane Society International (India), 2017). Social media can showcase an extensive network of local animal protection campaigns in Indonesia to establish strong information and ideological connections and are supported by easy access to social media. The ability of social media to establish communication networks between various national and global animal protection movements shortens the process of forming alliances. The social media accounts of the animal protection movement are always interdependent, creating a network of contacts that viewers can easily track (Aji, A.P., 2019).

Social media has great potential in many ways to protect people's health and combat all crimes through social media. Sheila (2014) pointed out that using social media to document incidents of sexual harassment while also protecting victims, demonstrate the importance of sexual harassment as a public health issue, and describe some social media efforts to document incidents and protect victims. It represents a case study of how social media activists use the power of Facebook, Twitter, and mobile networks to solve stupid sexual harassment problems. HarassMap draws reports of sexual harassment on a Google Maps and provides support services to victims (Sheila, 2014). Grande et al. (2014) claimed that conducted media research on key risk factors for chronic disease and government interventions. In the future, social media will be used to effectively promote health policy.

There is an opportunity through Twitter to increase trusted sources from the government, media and education sectors, and to make this information accessible to more Twitter users (Harris et al., 2014). Also, sources of health information deemed credible may be more persuasive, additionally, organizations on Twitter are considered more authoritative than individuals (Harris et al., 2014). Therefore, government and media sources may have influence and reputation (Harris et al., 2014). The lack of tweets about childhood obesity from accounts with high influence, such as government, media, etc., in this study suggests that there are limited

trusted sources of childhood obesity information on Twitter (Harris et al., 2014). The presence of the government and the media should be increased.

The remaining of the paper is structured as follows. Section 2 introduces the situations of giant pandas. Section 3 reports the information of study 1. Section 4 shows information about study 2. And last part section 5 is about the general discussion.

2. Study 1

2.1 Methods

The survey will be conducted in 2021-2022. My main research objects are the Sichuan Giant Panda Reserve and the Chengdu Giant Panda Breeding Research Foundation. I will use content analysis and Collection information. I collected the number of donations from 2019 to the present on the Chengdu Giant Panda Breeding Research Foundation, and the Baidu Index that has been seen so far in 2019, and then perform coding to study the impact of the giant panda reserve. In addition, I will conduct a literature review to collect the impact of previous papers on the media, as well as the impact on endangered animals and public attention. Then collect the donation data of the Chengdu Giant Panda Breeding Research Foundation and the specific data of the giant pandas on the Baidu Index through data analysis. Use the data of the Chengdu Giant Panda Breeding Research Foundation to analyze the relationship between media attention and public donations.

2.2 Results

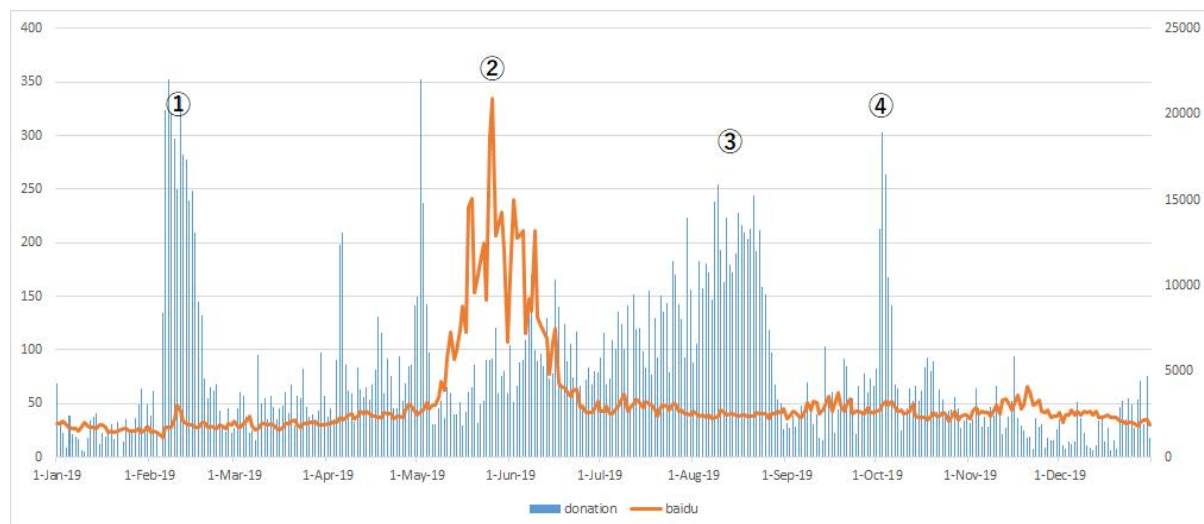


Figure 2. The Baidu search volume and the number of donations in 2019

The orange line in figure 2 is the Baidu index, which refers to how many times people search for pandas in Baidu every day. The blue histogram is the number of donations from the Chengdu Giant Panda Breeding Research Foundation, reflecting the number of donations per day. From figure 2 that there are four peaks, the first peak is during February to March. The reason for the increase in the number of donations during this period is due to Chinese Spring Festival. Because the Chinese New Year in 2019 is on February 5th. On February 10th, there was a piece of news about “Cute new year! Giant pandas in Qingdao Zoo”. People choose to travel during the Spring Festival, which leads to an increase in the number of donations.



Figure 3. Sichuan Wolong photographed a white giant panda, Xin jing report (2019). from <http://www.bjnews.com.cn/news/2019/05/25/583435.html>

Peak 2 appeared because of a report :2019-05-25, “Sichuan Wolong photographed a white giant panda”. As shown in figure 3, the appearance of this white panda has attracted the attention of many netizens through media reports.

The peak 2 of Baidu search from June to July is because of the upcoming summer vacation, people searched for places suitable for travel on the Internet. Chengdu is a popular tourist destination, so people will search for a lot of things about giant pandas on the Internet. News reports and propaganda made more people visit the Chengdu Giant Panda Breeding Base, and the number of tourists who donated money also increased as the number of tourists increased.

The increase in the number of donations at peak 3 is also due to the increase in the number of tourists during the summer vacation. This point is supported by a staff member at the foundation saying, “the number of donations increases during July to August because more tourists come during summer holiday.” on the phone, though it is not an official statement.

The number of donations from peak 4 increased in early October. This is because of China’s National Day on October 1st, and there are related reports. During the seven-day National Day holiday, people will choose to travel to the Chengdu Giant Panda Breeding Base and make donations.

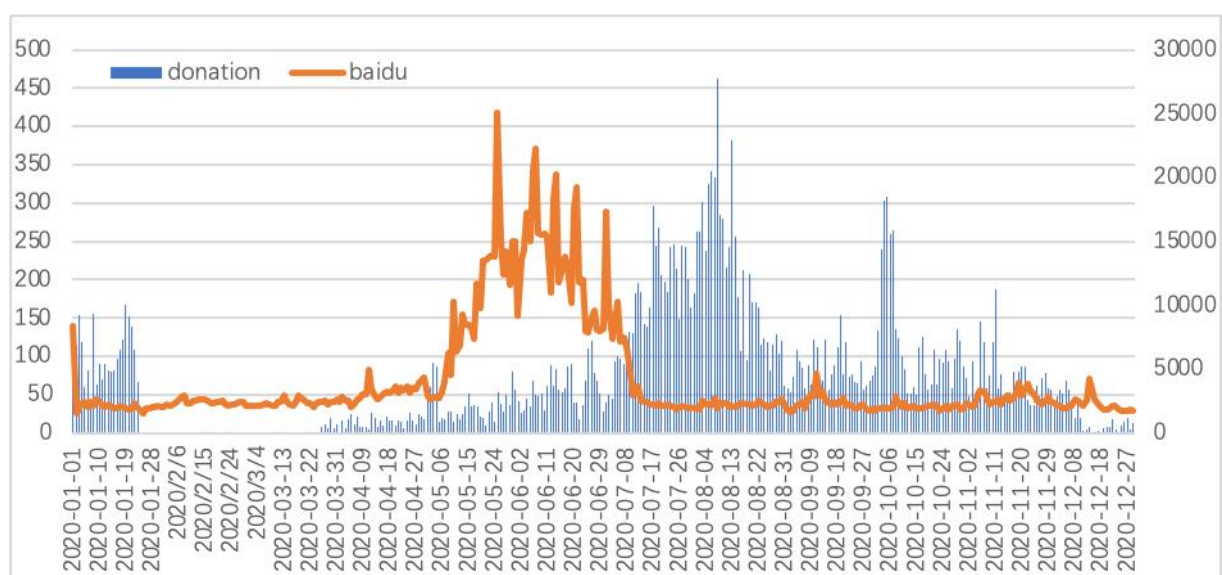


Figure 4. The Baidu search volume and the number of donations in 2020

Figure 4 is a comparison chart of the Baidu index and the number of donations in 2020. Through the comparison

of table 2 and table 1, it can be found that the general fluctuations are the same, but because of COVID-19, the number of donations and search volume in the first half of the year are relatively low. The wave shape in the second half of the year is similar. Figure 5 is only the situation in the first half of 2021, and the information needs to be updated later.

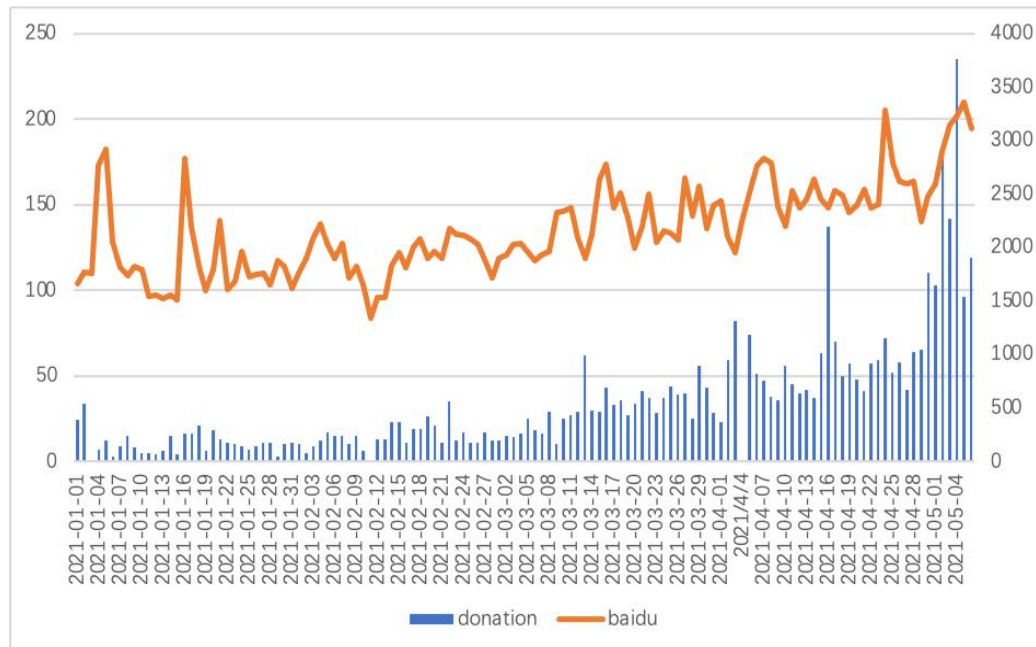


Figure 5. The Baidu search volume and the number of donations in 2021

2.3 Discussion

The results of my research are like the previous research. Previous research has shown that providing publicly recognized non-monetary incentives along with non-profit videos has a positive impact on “pro-social” donations (Shreedhar, G., & Mourato, S, 2019). In the conservation plan, people did not donate more to more endangered species (Colléony, A., Clayton, S., Couvet, D., Saint Jalme, M., & Prévot, A. C, 2017). Attractive species are more likely to be selected (Colléony, A., Clayton, S., Couvet, D., Saint Jalme, M., & Prévot, A. C, 2017). Tian, F., Labban, A., Shearer, R., & Gai, Q (2021) investigated the relationship between donations and social media activities of non-profit organizations. They found a positive relationship between various types of activities (supported by non-profit organizations and Sponsor) and donations.

Through the above data analysis, it seen that social media has effectively protected the giant pandas. With the increase in the Baidu Index, people’s donation data has also increased, although there is a certain lag. Because the exposure through social media can make people realize that endangered species need to be protected, and it is recommended to promote the protection methods at the same time. Many people don’t know how to protect endangered animals.

This method can also be applied when protecting other endangered animals, using social media, publishing news or related promotional videos to let people know about this species, and telling people that endangered species need help, and can help them through donations or other ways. Efficient use of social media can protect endangered animals to a large extent.

3. Study 2

3.1 Methods

3.1.1 Design

This research was a retrospective content analysis to analyze how we can make the most of social media to protect endangered animals. Content analysis is part of qualitative analysis, with the advent of online social media, content analysis can analyze user-generated content from a variety of sources (Anastasiei, I-D & Georgescu, M. R, 2020). Retrospective research designs are conducted after the fact, using information from events that occurred in the past (Salkind, N. J, 2010). Individuals are sampled and information about them is gathered from the past. The data are then analyzed to understand what might be causing the results. I will select

several animal protection-related accounts on Weibo, collect their Weibo content and interaction data (the number of likes, comments and reposts), analyzed what factors would affect the number of interactions on Weibo, and examined the correlation between content strategy and engagement.

3.1.2 Set up Keywords

For the selection of Weibo account, the following three keywords are set:

- (1) Animals
- (2) Pandas
- (3) Wild Animals

Because many account names contain these keywords but are not related to my research topic. I also set the filter that content of the accounts needs to be related to endangered animals or related to animal protection. And it is required to continue to update the Weibo within a short period of time before it is taken into consideration.

3.1.3 Find Accounts or Organizations

Firstly, nine accounts were identified through keywords and the filter. Through keyword 1, found 沙雕动物在哪里 (Where are the sand sculpture animals), 国家动物博物馆员工 (Employees at the National Zoological Museum), 国际爱护动物基金会 (International Foundation for the Protection of Animals), 亚洲动物基金 AAF (Asian Animals Fund AAF). Through keyword 2, found 熊猫守护者 (Panda Guardian), 成都大熊猫繁育研究基地 (Chengdu Research Base of Giant Panda Breeding), 中国大熊猫保护研究中心 (China Giant Panda Research and Conservation Center). Through keyword 3, found 非洲野生动物基金会 (African Wildlife Fund), 上海野生动物园 (Shanghai Wildlife Park). Secondly, Choose “giant panda” as the keyword. If there are more than 15 blogs, then choose the newest 15 blogs (until 11.16). In the end, 100 blogs were collected from 10 accounts (articles were not included). The table 1 shows the number of fans for each account, the number of posts that was selected in each account, and the average quantity of interactions from posts per account. Looking at table 1 in more detail, we can see that there are more than 2 million people followed “熊猫守护者 Panda Guardian” which is the biggest account. Meanwhile, the number of interactions per Weibo post of “熊猫守护者 Panda Guardian” is also the biggest one which is approximately 25 thousand.

Table 1. Accounts Information

Account Name	Followers	Posts number	Interactions per Weibo post
沙雕动物在哪里 Where are the sand sculpture animals	1,140,000	6.00	869
国家动物博物馆员工 Employees at the National Zoological Museum	782,000	13.00	252
国际爱护动物基金会 International Foundation for the Protection of Animals	756,000	5.00	70
亚洲动物基金 AAF Asian Animals Fund AAF	647,000	14.00	47
成都大熊猫繁育研究基地 Chengdu Research Base of Giant Panda Breeding	529,000	14.00	4290
熊猫守护者 Panda Guardian	20,033,000	15.00	25734
上海野生动物园 Shanghai Wildlife Park	63,000	15.00	46
非洲野生动物基金会 African Wildlife Fund	438,000	2.00	17
中国大熊猫研究保护中心 China Giant Panda Research and Conservation Center	1,006,000	16.00	190

3.1.4 Coding

The coding framework determines the strategy used in the post by examining the qualitative data collected from the content of the post, including text, video, and photos (Klassen, et al., 2018). In order to find the factors that affect the amount of post interaction, I use linear regression model to analyze data. Firstly, I set 11 factors that may affect the interaction data, Re-posting, Video, Photo, Text, Donation, Famous people, Amusing post, Specific animal, Knowledge-based, Call for protection, Ask for interaction. Table 2 describes the specific meaning and coding way of each factor.

Table 2. Meaning of coding

Variable name	Description	Code
Re-posting,	Whether the post is reposted	1 if yes, 0 otherwise
Video	Whether the post contain video	1 if yes, 0 otherwise
Photo	Whether the post contain pictures	1 if yes, 0 otherwise
Text	Whether post focus on text content	1 if yes, 0 otherwise
Donation	Whether the post mention donations	1 if yes, 0 otherwise
Famous People	Whether the post mention or appear celebrities	1 if yes, 0 otherwise
Amusing post	Whether the post is amusing	1 if yes, 0 otherwise
Specific animal	Whether the post mentions a specific animal	1 if yes, 0 otherwise
Knowledge-based	Whether the post has introduction to knowledge-related content	1 if yes, 0 otherwise
Call for protection	Whether the post call people to pay attention to animal protection	1 if yes, 0 otherwise
Ask for interaction	Whether the post guide people to interact	1 if yes, 0 otherwise

3.1.5 Engagement Metrics

The quantitative data collected includes social media engagement. Social media engagement measures how people interact with your social media accounts and content (Eckstein, 2021). I choose three measurements that are available at Weibo. They are (1) Reaction: When users express their reaction to the post by clicking “Like,” (2) Comment: When the user makes a comment or reply to a post, (3) Share: When a user reposts a post, the number of interactions is the sum of the number of likes, comments, and shares. Engagement is a great way to measure whether the content is resonating with audience.

3.2 Results

Table 3 shows the conclusion of analysis applied to the # of likes, the # of comments, the # of shares and the total number of them. The model for the # of likes demonstrates that “specific animal” and “Knowledge-based” are statistically significant at 10 % level. It means that the inclusion of these characteristics tends to increase the number of likes. The result of the # of comments model is the same as that of the # of likes model, which shows that blog posts containing “specific animals” and “knowledge-based” will also increase the number of comments. The model for # of shares establishes that the “re-posting” and “knowledge-based” are statistically significant at the 10% level, the P value of “re-posting” is 4%, and the “knowledge-based” The P value is 6%. This exposes that including these features can increase the forwarding rate. The model result of the total interaction volume is also the same as the model result of the # of likes.

Table 3. Result

Variables in model	Interactions, log (10) Standardized beta (95% CI)	P value	Variables in model	Interactions, log (10) Standardized beta (95% CI)	P value
# of likes			# of comments		
Re-posting	-0.30 (-0.8 to 0.21)	0.25	Re-posting	0.22 (-0.27 to 0.73)	0.37
Video	0.50 (-0.28 to 1.28)	0.20	Video	0.56 (-0.2 to 1.32)	0.15
Photo	-0.16 (-0.95 to 0.63)	0.70	Photo	0.5 (-0.28 to 1.28)	0.20
Text	-0.13 (-0.71 to 0.45)	0.66	Text	-0.37 (-0.94 to 0.2)	0.20
Donation	-0.01 (-2 to 1.98)	0.99	Donation	-0.37 (-2.31 to 0.71)	0.71

				1.58)
Famous people	0.52 (-0.37 to 1.41)	0.25	Famous people	0.35 (-0.52 to 1.21) 0.43
Amusing post	0.31 (-0.21 to 0.84)	0.24	Amusing post	0.38 (-0.14 to 0.89) 0.15
specific animal	0.67 (0.16 to 1.17)	0.01	specific animal	0.49 (0 to 0.99) 0.05
Knowledge-based	0.46 (-0.04 to 0.97)	0.07	Knowledge-based	0.47 (-0.03 to 0.96) 0.06
Call for protection	-0.27 (-0.81 to 0.26)	0.31	Call for protection	-0.15 (-0.67 to 0.37) 0.56
ask for interaction	0.06 (-0.60 to 0.73)	0.85	ask for interaction	0.32 (-0.33 to 0.97) 0.33
# of shares			# of total number	
Re-posting	0.58 (0.01 to 1.14)	0.04	Re-posting	0.04 (-0.46 to 0.54) 0.86
Video	0.7 (-0.15 to 1.56)	0.11	Video	0.56 (-0.2 to 1.32) 0.14
Photo	0.5 (-0.38 to 1.37)	0.26	Photo	0.17 (-0.6 to 0.95) 0.66
Text	-0.43(-1.07 to 0.21)	0.19	Text	-0.28 (-0.85 to 0.28) 0.32
Donation	-0.13 (-2.33 to 2.07)	0.91	Donation	-0.15 (-2.11 to 1.8) 0.88
Famous people	0.09 (-0.89 to 1.07)	0.85	Famous people	0.33 (-0.54 to 1.19) 0.46
Amusing post	0.30 (-0.28 to 0.89)	0.30	Amusing post	0.30 (-0.22 to 0.82) 0.25
specific animal	0.32 (-0.24 to 0.88)	0.26	specific animal	0.56 (0.07 to 1.06) 0.03
Knowledge-based	0.54 (-0.02 to 1.09)	0.06	Knowledge-based	0.5 (0 to 0.99) 0.05
Call for protection	0.14 (-0.45 to 0.72)	0.65	Call for protection	-0.12 (-0.64 to 0.4) 0.65
ask for interaction	0.34 (-0.39 to 1.08)	0.36	ask for interaction	0.15 (-0.5 to 0.8) 0.65

3.3 Discussion

Including “Specific animal” and “Knowledge-based” tends to increase the number of likes and comments. There are some reasons for this situation. Firstly, some accounts are specific animal accounts. For example, Panda Guardian and Chengdu Giant Panda Breeding Base are giant panda related accounts, so people who follow them want to see content related to giant pandas, because this is what they are interested in, and it is easier to get likes and comments. Bernazzani (2019) mentioned that posting photos of animals can get more comments. This is consistent with my result. Patel (2021) claimed that Facebook likes will show our preferences that we don't disclose in our profile, people tend to like what they're interested in.

The second reason is because I set “Giant Panda” as the keyword, many of the contents found are related to pandas. The result is that many posts mention a specific animal (panda). Because Chinese people highly like Giant Pandas, if the content is about specific animal (Panda), they can get a larger number of comments and likes. If the blog post is too extensive, it is difficult to resonate with users, so there will be fewer likes and comments. Byrne (2021) pointed out that giant pandas are very popular among foreigners, especially young people. Hembrey (2013) also pointed out that the obsession with giant pandas also stems from the fact that they are extremely rare.

The third reason is that people are eager to acquire new knowledge through social media, so some blog posts with knowledge sharing attributes will have a higher rate of likes and comments. A study mentioned that people who are more likely to comment on news sites are those who use a number of different social media software to get news information (Kalogeropoulous, A, Negredo, S, Picone, I, & Nielsen, R. K, 2017).

Including “re-posting” and “knowledge-based” can increase the number of shares. When analyzing the factors

that affect the amount of sharing, I found that it has a close relationship with the two factors of “re-posting” ($P = 0.04$) and “knowledge-based” ($P = 0.06$). If this Weibo is reposted and the content with the attribute of knowledge sharing will get more shares. I think the reason for this phenomenon is that first of all sharing requires users to forward to the homepage, so it is generally the content that users want to share with friends, and knowledge-related Weibo is conducive to being shared. Acumen and experience can be spread in social network space through the behavior of “reposting” (Pei, J, Lu, Z, & Yang, X, 2021). 68% said they share to let others better understand who they are and what they care about (Seiter, 2016).

On the other hand, the re-posting Weibo has passed a round of screening, indicating that the quality and content of this Weibo are relatively high, so it is more likely to be reposted. Sharing news on social networking sites or seeing articles shared by friends in SNS will also increase the chances of discussing with other people of different kinds on social networks (Choi & Lee, 2015). Weibo posts published by effective users, well-known users or authoritative accounts are more likely to be forwarded by other Weibo users. (Pei, J, Lu, Z, & Yang, X, 2021). The Weibo accounts I choose are all with authentication information, which is more influential and accounts with a large number of fans. From a sociological perspective, the public has a herd mentality, is more susceptible to peer influence, and engages in specific behaviors (Yin et al., 2020). The number of retweets for each Weibo is clearly displayed. Therefore, the content that has been forwarded once by the official large has a higher chance of being forwarded again. Pei, Lu, & Yang (2021) found that social influence characteristics are the most important factor affecting the forwarding and dissemination of Weibo, followed by content characteristics and author characteristics. People don't make much of their own decisions; by contrast, they use the collective wisdom of the public as inspiration to comment on Weibo (Cocosila & Igonor, 2015). Compared to traditional media, online social media gives people autonomous control over what, how often and when they post, and gives them instant access at their convenience (Oh, C, Roumani, Y, Nwankpa, J. K, & Hu, H. F, 2017). Figure 6 is the result of the study conducted by *The New York Times* (2016) on why people share. In figure 6 there are five main drivers of sharing. And 84% of the respondents said that because it is a good way to support the cause or issue which they care about.

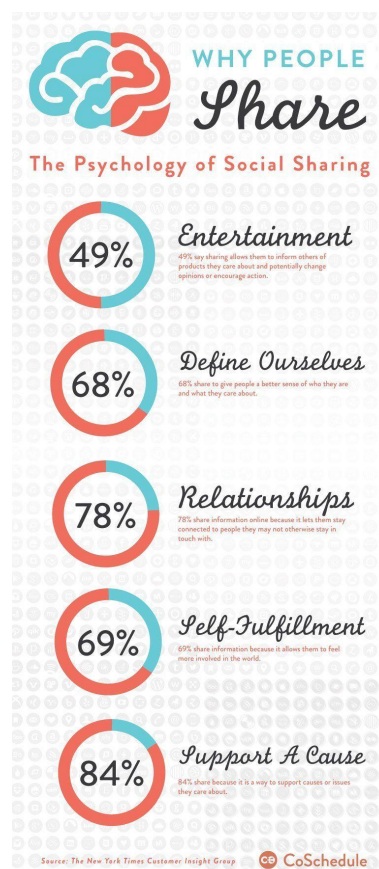


Figure 6. Why people share, The New York Times. (2016). The Psychology of Sharing, from: <https://web.archive.org/web/20161007212312/http://nytmktg.whsites.net/mediakit/pos/>.

4. General Discussion

Despite the large number of publications on social media topics in the past few years, there is still a lack of indigenization research (Fukano et al, 2020)). One reason for this could be cultural differences as well as language issues. Therefore, I focus on some local social media platforms in China, such as Baidu, Weibo, etc., which are all social apps used by the Chinese. Analyzed from various angles by taking samples from prominent Chinese social media networks.

The first research question is whether social media can contribute to the protection of giant pandas. Focusing on the protection of giant pandas can better reflect localized research. The hypothesis is that the media can attract people's attention, and people will make more donations to protect giant pandas, which will play a role in better protection of giant pandas. Therefore, Study 1 focused on the Baidu Index and collected samples of donations for analysis.

The second research question is what factors on social media influence people's attention to the protection of endangered animals. In study 2, I collected the content on Weibo to conduct sample analysis. The hypothesis is that if the content of Weibo posts is related to specific animals or contains some knowledge and popular science information, the posts can better attract people's attention.

Through my research, I found that the exposure of online media can be used to better protect endangered animals. The Chinese government currently has relevant policies to use media exposure to enhance people's awareness of the protection of endangered species and better publicize relevant knowledge. For example, there are many documentaries (e.g., *Tianqing Love Song*) about the protection of endangered animals in China, including TV advertisements (e.g., protect endangered animals) that mention relevant animal protection content. On the day of Earth Day on April 23, 2020, *Tianqing Love Song* was launched, and was shortlisted for Jackson Wild's "World Wildlife Day", "Science, Innovation and Exploration" finals (Wuliredian, 2020). It is the only nominated Chinese story among more than 300 works. However, the Chinese government is still limited to using traditional media for exposure and propaganda and does not make good use of new media including Weibo and Baidu (Office of the State Council, 2018). In this regard, the Chinese government should make more use of new media.

The Chinese government can use new media to increase people's understanding and awareness of the illegal hunting of wild animals. In China, there are still many cases of illegal hunting of wild animals. Relevant departments have strengthened supervision and adopted several measures to protect wild animals.

Firstly, China has successively promulgated a series of laws and regulations such as the Wildlife Protection Law, the Regulations on the Protection of Terrestrial Wildlife, and the Forest Law (XINHUANET, 2004). At the same time, various localities, especially key provinces, and cities where wild animals often gather, have also issued corresponding laws and regulations to protect wild animals and their living environment by cracking down on crimes and publicizing and educating knowledge about animal protection (XINHUANET, 2004). These new policies and regulations to protect animals can be publicly announced through social media, which can attract people's attention to the protection of endangered animals to a certain extent. When the attention increases, more people will discuss and even donate money (Fukona et al, 2020). More effective laws and regulations related to animal protection can be established through the support of the public opinion.

Secondly, in recent years, the Chinese government has invested heavily in ecological construction. Through the implementation of six key forestry construction projects, including natural forest resource protection, conversion of farmland to forests, wildlife protection, and construction of nature reserves, many animals have been effectively protected (XINHUANET, 2004). Doing ecological construction requires some investment and some money. By using social media, we can get more people's attention and support to invest in ecological construction (Fukona et al, 2020), and we can also get some funding for ecological construction, and the donations can be used to restore habitats. A very successful example of China's establishment of nature reserves is the "Ant Forest". Since Ant Forest launched in August 2016, Ant Forest and its NGO partners have planted about 122 million trees in China's driest regions. The project has become China's most important private sector tree planting event (Kong, W.Z, 2019). Ant Forest is a public activity designed by Alipay customers for the first "Carbon Account." The user collects the energy by walking, taking the subway, paying for utility bills online, paying for transportation tickets online, registering online, and buying online tickets. Virtual energy can be used to plant trees or apply for animal reserves. After users have enough energy, Alipay Ant Forest and public welfare partners will plant a real tree on the earth or protect corresponding protected areas for endangered animals to nurture and encourage Low-carbon environmental behavior of users. On September 19, 2019, China Ant Forest Project won the United Nations Global Conservation Award (UN Environment Programme, 2019).

Thirdly, in terms of public education, the news and social media also played a full role in publicizing the importance of protecting wild animals and plants to society. In particular, the media have publicly destroyed the illegally stolen and sold smuggled tiger bones and rhino horns, and publicly destroyed Tibetan antelope fur. Through news and public reports, the discovery of wildlife smuggling in Ruili, Yunnan Ruili used widespread concern. The social response was strong and strengthened the whole society (XINHUANET, 2004). By covering

these news, people can increase their attention, and whenever there is major news, the search volume of the Baidu Index for a specific animal will increase. This shows that the media can increase people's attention and play a role in protecting endangered animals. With the popularization of new media, there are many self-media accounts related to animal protection in China, including WeChat public account, Weibo account, Douyin account and so on. In my research, I mainly collect Weibo accounts related to animal protection on Weibo. While there are many accounts, their interaction data is not good. However, self-media accounts need better maintenance. At present, there is no such account that is particularly good and successful. It needs to cooperate with the state to launch a convincing and interesting public account, such as Ant Forest.

The study still needs to address some limitations. The limitation of Study 1 is that the data was collected over a short period of time. As for the limitations of the sample, the Baidu index and panda donation sample data in study 1 only lasted for 3 years. If you want more prepared results, you need to expand the sample and get data over a longer period of time.

Limitations of Study 2 also include the short time for data collection and the lack of sample data. It does not cover many aspects, so sample data should be added. At the same time, most of the accounts I collected are about pandas. In the future research, when the samples are expanded, the selection range of accounts should also be expanded to include more animals, so as to better analyze the impact on endangered species. Furthermore, although I set engagement metrics by collecting data, the degree to which users receive and use this information cannot be determined from these metrics alone. While traditional social media engagement statistics (reactions, comments, shares, and interactions) indicate the number of users who interact with social media posts, they do not indicate those who view interactions with content "offline," nor do they indicate behavioral changes as a result of interacting with posts. Further research can analyze the content of comments to better understand the user's behavior intention.

My research results are more consistent with my hypothesis, so I will expand my sample data in my future research to further test whether the same results can be obtained in a larger sample, to make the research more convincing. I suggest that the content of Weibo and comments can be specifically analyzed in the future research, which is neglected in my current research.

I have solved my research problem in China, so I can place my research content in Japan, South Korea, Thailand and other Asian countries for future research. To study whether the same results can be obtained in different countries and different cultural backgrounds.

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