

## Research Article

# Empirical Analysis of News Dissemination Effect Based on Energy Data in the Internet + Era

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Matter, energy, and information are the three major elements that constitute modern society. In the system of three major elements, energy is the driving force to support human development. In today's world, energy is more related to the overall security of the country. With the development of science and technology, technologies such as social media, cloud computing, and the Internet of Things have emerged and developed day by day, relying on the network. Big data and massive information flood people's lives and have a huge impact on all walks of life. The convergence of information technology and the economy and society has led to the rapid growth of data. "Internet +" has risen as the national strategy, and data has become a national basic strategic resource. Based on researching the achievements of predecessors, combined with the first-hand data obtained from practice, this paper mainly uses the literature analysis method and the case analysis method to conduct research. In the case analysis, the content analysis method and sample analysis method are used to study the development status of energy news in the mobile Internet era in China and explore the development method suitable for energy news communication in the mobile Internet era.

## 1. Introduction

In some developed countries where the Internet appeared earlier, the related research is relatively systematic. Take the United States as an example. The Internet has been utilized in this country for nearly 50 years and has experienced about half a century of development and innovation. The mobile Internet appeared relatively late, mainly relying on the upgrade of mobile communication equipment and the development of wireless Internet networks. Since Apple released the iPhone in 2007 and the first Android smartphone launched in 2008, smartphones have gradually become popular, which also provides the equipment foundation for the development of the mobile Internet. In Japan's 2008 article "The Diffusion of Mobile Internet in Japan," co-authored by Japanese scholars Mito Akiyoshi and Hiroshi Ono, mobile Internet access or e-mail had become increasingly popular in Japan at the time, especially for those who could not afford a computer.

The rise of the Internet has had a huge impact on traditional media. Jeff Jarvis pointed out that "the journalism industry has been completely changed, and Google is the reason for this change," which is evident in the predicament of the print media [1–3]. The concept of media fusion was put forward by Professor Poole of the Massachusetts Institute of Technology as early as the 1980s. He believed that media fusion refers to the development trend of various media showing multifunctional integration. What Professor Poole put forward is the most basic concept of media convergence. Now, the more generally accepted view on media convergence is that Andrew Nachison, director of the Media Research Center of the American Press Institute, defines media convergence as "print, audio, video," "strategic, operational, and cultural alliances among interactive digital media organizations," and the "five media fusion theories" summarized by Professor Gordon of Northwestern University.

The transformation of news production has opportunities but also challenges in the process of media integration [4–7]. The former chairman of the American Professional Journalists Association believes that in the Internet age, news and opinions on the Internet are often intertwined and people use various computer software package to easily edit pictures, sound, and video. The ethical norms of journalism formulated in the pre-Internet era did not involve the changes brought about by these technologies [8–10]. In their 2014 book “Renovation of Journalism Ethics in the 21st Century,” Kelly McBride, an expert from a well-known media education institution in the United States, and Tom Rosenstiel from the American Journalism Institute, discussed how journalism ethics can adapt to changes in the Internet age. After entering the era of mobile Internet, real estate news in the United States adheres to the principles of “fairness,” “honesty,” and “truth,” guides its news production, and strives to become a news industry that can be trusted by the public [11].

The earliest research on the mobile Internet in China can be traced back to 2000. He Xiaomei pointed out that the Wireless Application Protocol (WAP) enables mobile users with wireless terminal equipment. It can easily and quickly access interactive information services. The development of WAP technology will enable mobile phone operators to closely integrate with the Internet and change consumers’ surfing habits. The advent of the mobile Internet era has accelerated the process of media integration and has also promoted the transformation of traditional journalism. Ding Boquan analyzed in detail the connotation of media integration under the current national conditions of China and pointed out that the advantage of media integration lies in learning from others’ strong points and allowing news practitioners to release their energy to the greatest extent, while the disadvantage of media integration lies in the professionalism requirements of news practitioners [12–15]. In the process of dissemination, the humanistic heritage is also ignored. It is emphasized that in the face of media integration, we should maintain a rational attitude to understand, respond to, and participate in, so as to seek advantages and avoid disadvantages and promote the healthy development of the media integration road in China. Scholar Che Yongcheng pointed out that after more than ten years of development, the mobile news media in China has reached a level that is in line with the world, with rich content. The network service is good, the terminal products are diverse, and the user consumption pattern has begun to take shape on an industrial scale [15–17].

The rapid development of the mobile Internet is changing people’s ways of life and living habits inadvertently. Energy network information, as common information in people’s daily lives, is undergoing a double transformation from production mode to operation mode. By arranging, analyzing, and summarizing the data, the authors analyze the development status of the energy news of China in the mobile Internet era and propose feasible solutions.

## 2. Methods and Theory

*2.1. Content Analysis Method.* This article adopts the sample survey method of the combination week to study the content released by Sina Leju. The study selected March 30, 2020, to May 19, 2020, as the research phase, with a total of seven weeks and 49 days. One day was selected each week, and the news information released on that day was taken as the research object. Monday of the first week is selected as Monday of the combination week, Tuesday of the second week is selected as Tuesday of the combination week, Wednesday of the third week is selected as Wednesday of the combination week, Thursday of the fourth week is selected as Thursday of the combination week, and Friday of the fifth week is selected as Friday of the combination week, Saturday of the sixth week is selected as Saturday of the combination week, and Sunday of the seventh week is selected as Sunday of the combination week. Through the above extraction method, a new combined week date is finally obtained.

*2.2. Text Analysis Method.* Text analysis is a research method that extracts objective and systematic commentary by comparing, analyzing, and synthesizing related texts. In this study, 260 original manuscripts combined with weekly statistics in the above content analysis method were selected as the sample size, and 30 articles were randomly selected for text analysis. In order to examine the content of manuscripts on different topics more comprehensively, different sample numbers are selected according to the proportion of manuscripts on each topic.

*2.3. Investigation and Analysis Method.* Questionnaire questions are set closely around the composition characteristics of the audience of the news information released. By collecting the basic information of the audience, it is stratified from the aspects of gender difference, age group, education level, occupational composition, reading habits, etc., to describe the image of the audience group and comprehensively explore the characteristics of the composition of the audience. The distribution method of the questionnaire is a combination of online distribution and offline distribution, and the survey respondents cover the whole country. After nearly a month of questionnaire distribution, a total of 800 valid questionnaires have been recovered.

## 3. Results and Analysis

*3.1. Research on the Production Content of Energy News.* From the data in Figure 1, there is a big difference in the number of articles published on the Internet every day in the combination week. The number of articles published on statutory holidays is less than that on working days. Among them, the number of articles published on Monday is the least in the combination week. More than 60 articles are published every Wednesdays and Thursdays. Observing the release situation of each topic, the topic of “Energy Price” has the largest number of daily releases, followed by the topic of

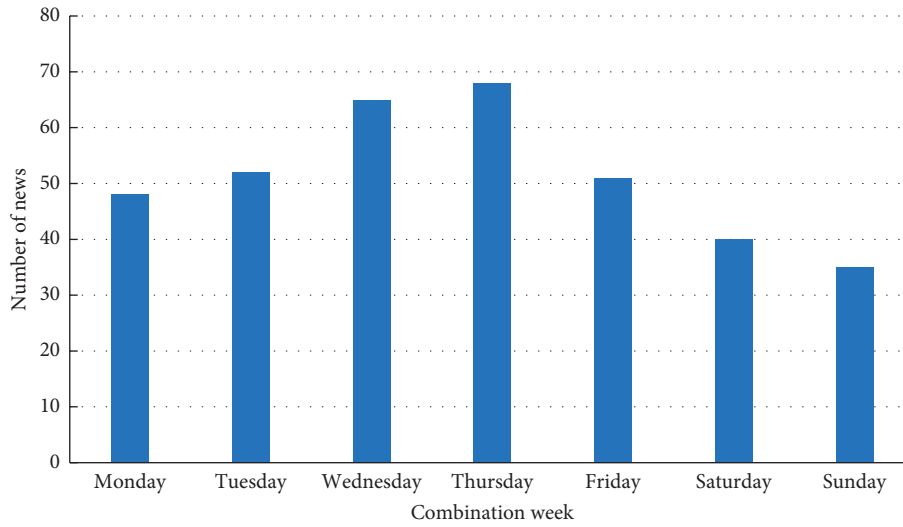


FIGURE 1: Number of energy news publications.

“Energy World Pattern” and the topic of “Energy Technology” (Figure 2). From the data in Figure 3, the number of original articles in energy news information released every day in the combination week is not fixed and the number of original articles on working days is more than the number of original articles on holidays. The daily original manuscripts of the combination week are more than 10 and at most 35 a day.

Through the content analysis of the news information release in the news in the combination week, the advantages and problems in the content production can be summarized.

The advantages of energy production content are reflected in the following three aspects: (1) The content is substantial. The amount of information released is large, with an average of more than 30 reprints and original manuscripts per day, providing the audience with sufficient reading options. (2) There are many types. There are 3 topics, each of which publishes information for different fields. Starting from the diversity of the audience’s reading needs, it comprehensively takes care of different reading interests and habits. (3) The proportion of originality is high. Nearly half of the published content is original content. The problem of energy content mainly lies in the lack of information released on holidays. The amount of information released is greatly affected by holidays. The amount of information released on Saturday and Sunday is much less than that on weekdays. However, users have more time at their disposal on weekends and other statutory holidays. Increasing reading demand and decreasing information release volume are not conducive to consolidating audiences. It is recommended to increase the number of staff on duty during the holidays and to open a special column on weekends to better meet the audience’s reading needs on rest days.

3.2. Research on the Production Methods of Energy News. Among the 30 selected original manuscripts, news reports are used for routine events and emergencies with significant value, such as market dynamics and policy introduction, are

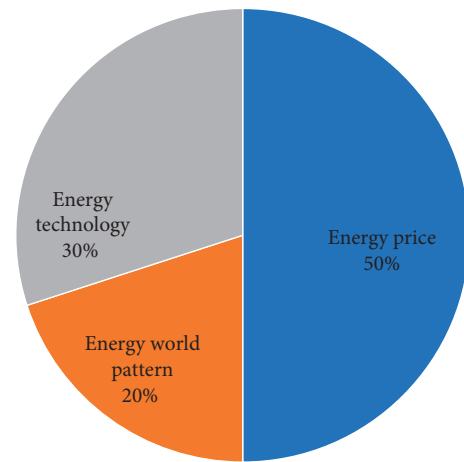


FIGURE 2: Proportion of average daily energy news in the combination week.

published by SMS. Among them, original manuscripts mainly choose whether to include pictures according to the content of the theme. For general activities, evaluations, and planning manuscripts, pictures are often used to achieve the effect of a stronger picture of the content of the article, thereby assisting understanding.

Second is the depth of content. The “depth” of the published information refers to “the audience’s awareness of the facts that happened through the information report,” and its essence lies in the breadth of the amount of information that the audience can obtain from a report. “In-depth” information can not only let the audience know the “what” but also let the audience understand the “why” and even guide the audience “how.” Through the analysis of the research samples, it is found that the content depth of the information is greatly affected by the genre of the article. News manuscripts generally only indicate the time, place, and general content of the latest events, while analysis, interviews, comments, etc. will further explore the real

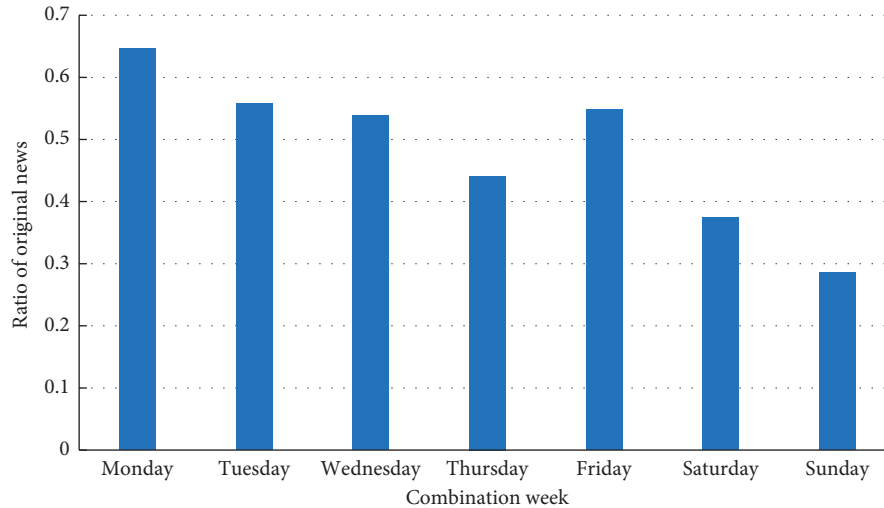


FIGURE 3: Proportion of original news data.

objects. Behind it, it is more in depth than the content of the news manuscript. In addition, the information release of emergencies generally adopts simple news first, followed by in-depth reports in the follow-up reports released later.

Third is the language characteristics. The author uses a text analysis method to explore the language characteristics of energy news information from two aspects: title and content. From the title point of view, the titles of the selected 30 manuscripts are relatively simple and direct, and usually, the central idea of the report is more clearly reflected in the title, so that the audience can judge the general content of the report by reading the title, so as to quickly select the needs. From the content of the manuscript, the energy news articles are easy to understand, concise, and clear. In terms of the writing of the article, the arrangement of the structure is quite ingenious and it usually starts with attractive language to increase the readability of the information content.

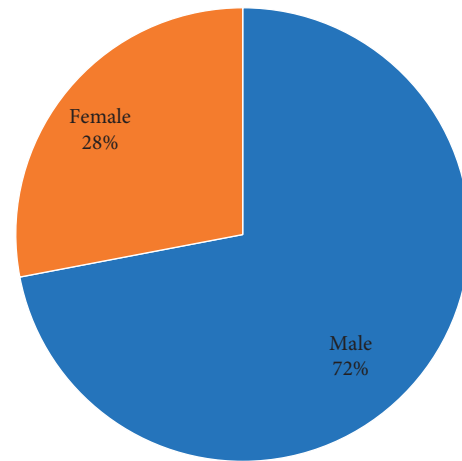


FIGURE 4: Gender analysis of the questionnaire respondents.

**3.3. Empirical Analysis of News Information Dissemination Effect.** The authors sorted out 800 questionnaires collected and made statistics on the collected contents. According to the five conditions of “gender,” “age,” “educational education,” “occupation,” and “browsing frequency,” the authors do the statistical analysis, respectively. The distribution of the number of people and the proportion of the number of people under each condition are determined, so as to make a systematic classification of the audience composition of the news information (Figures 4, 5, 6, 7). The statistical results show that in terms of gender distribution, nearly 70% of the respondents are male, and news information in energy is more popular with male audiences. In terms of age distribution, most of the audiences are aged 21–35 and 36–50 years. In the two age groups, the audience of news information is mainly young and middle-aged people. In terms of occupational distribution, government personnel and self-employment personnel are the most popular, followed by education and scientific research workers and the audience among students is relatively small. In terms of

browsing frequency, the respondents who choose to “occasionally browse” are the most, followed by “frequently browse.” Nearly 20% of the respondents have fixed habits, and there are some respondents who have never browsed. However, the number of people is small, accounting for only 10% of the total. In terms of the reasons that affect the audience’s browsing, the main reason why the audience chooses to browse energy news information is out of personal needs.

After further analyzing the collected data and exploring the reasons that affect the audience composition of news information in energy, the following four conclusions are drawn First is the gender differences. Energy news information is more popular among men. Men not only have more news information than women but also have a higher browsing frequency than women. It can be seen that energy news information has a better audience base and communication effect among male audiences (Figure 8). For the age stratification, energy information has a weaker effect on people under the age of 20. Although most of the viewers are

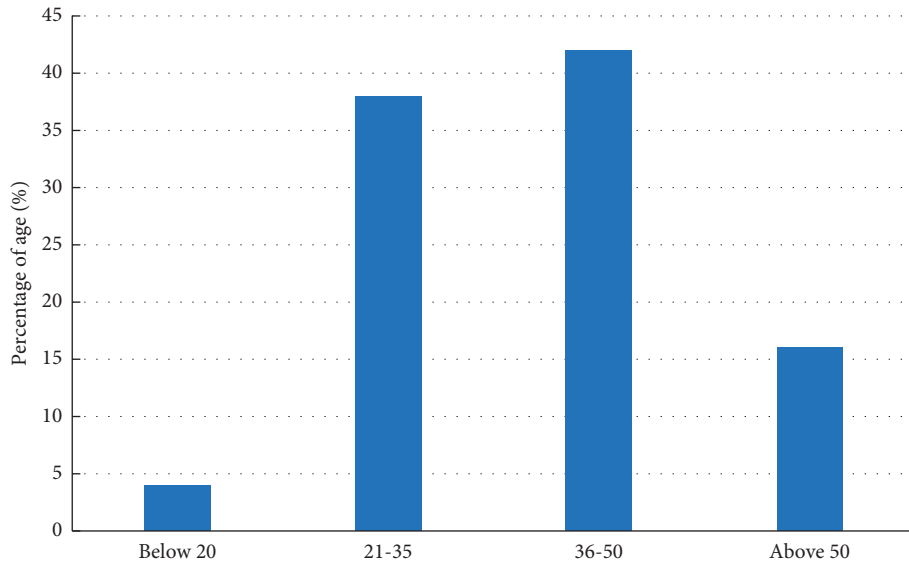


FIGURE 5: Age analysis of the questionnaire respondents.

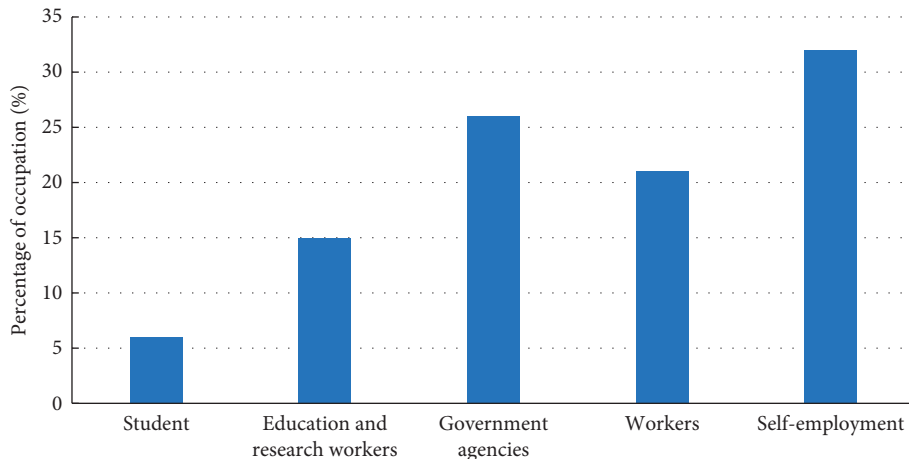


FIGURE 6: Occupation analysis of the questionnaire respondents.

concentrated in the 21–35 and 36–50 age groups, the audience with the highest browsing frequency is concentrated in the 36–50 age groups. The above age groups, of which the age group over 50 is the audience age group with the highest browsing frequency, may be related to the needs of the audience (Figure 9). For the occupational relevance, the browsing frequency of the student group is low and the browsing frequency of education, scientific research workers, government agencies, and public institutions personnel is relatively high (Figure 10). The factors of information are relatively complex, which may be due to many reasons such as interest, economic basis, and available time.

Summarizing the results of the questionnaire, it can be seen that the basic situation of the audience of energy news information can be summarized as the following characteristics: the audience base is relatively good; the composition types are rich, among which there are more males; the loyal audience is mature in age; and the motivation to browse the information is moderate, mainly for personal demand-oriented information browsing.

#### 4. Suggestions

*4.1. Forming a Three-Dimensional Energy News Dissemination Network Layout.* As the status of energy issues in the economic and social development of China is gradually highlighted, how to use a variety of media to spread energy news well in the future requires both theoretical exploration and practical innovation. The authors believe that to form a three-dimensional energy news dissemination pattern, several groups of relationships should be coordinated: First, the division of labor and cooperation in energy news dissemination between mainstream media and market-oriented media should be coordinated. The current state is that there is no overall planning mechanism for the two types of media in energy news reporting. Overall, energy information reporting lacks systematicity and fixed topic settings, making it difficult to impress the audience and affect the effect of energy news dissemination. Second, we should coordinate the relationship between comprehensive media and industry media. At present, although most of the major comprehensive media in China have

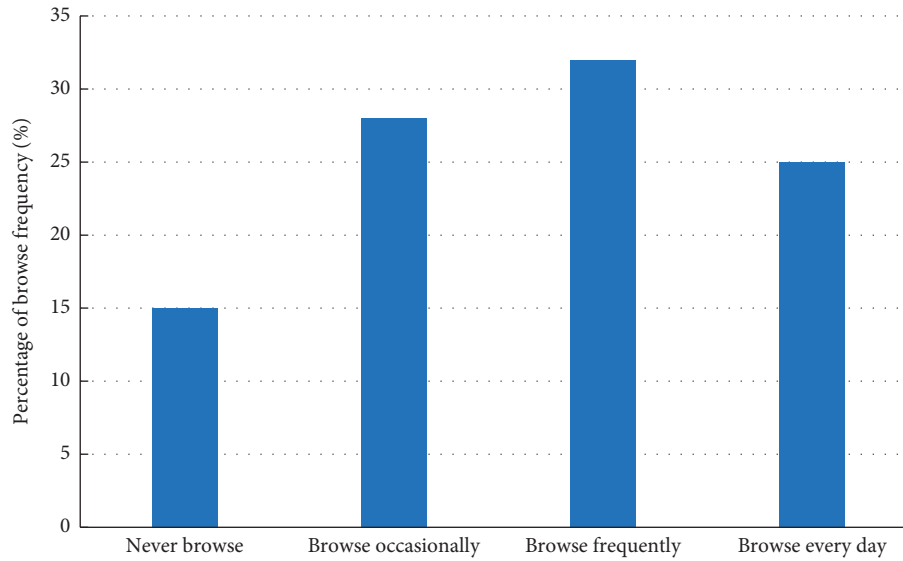


FIGURE 7: Browse frequency analysis of the questionnaire respondents.

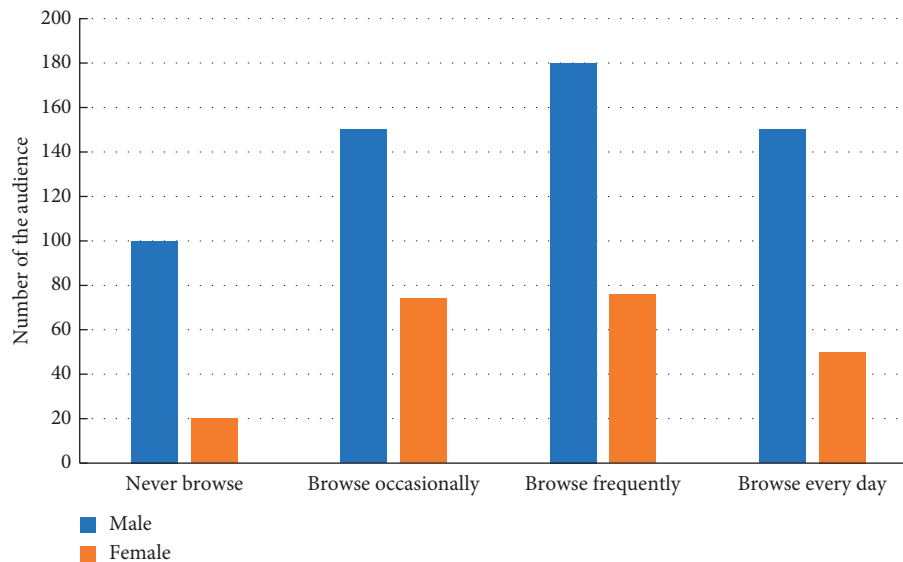


FIGURE 8: Differences in gender composition of men and women in each frequency segment.

energy news reports, there are not many media that form brand columns. Although there are many professional media in the energy industry in China, their media communication is highly specialized and in depth but mainly limited to “circle spread” in the industry, so social awareness, recognition, and “involvement” are relatively low. Third, we should coordinate the relationship between emerging media and traditional media. The attractiveness, penetration, and influence of emerging media to audiences are growing rapidly. The reading mode of the audience is casual, random, and “shallow reading” at any time, and it is difficult to focus on reading and in-depth reading.

*4.2. Attaching Importance to the International Influence of Energy News Dissemination and Influence of International Public Opinion.* Energy news is an important topic that runs through international and domestic news reports. An

important mission of energy news dissemination is to open up the two energy public opinion fields of “domestic” and “international,” thereby promoting international dialogue, understanding, and cooperation in the field of energy. At present, with the rapid development in China’s energy industry, energy companies have long gone abroad to conduct international energy cooperation. But what is inconsistent with this is that the energy news dissemination of China does not have the strength to have an important influence on the international energy stage. Energy news and dissemination urgently needs to “go out,” actively introduce to the international community the vision of China’s energy industry cooperation, mutual benefit, and win-win situation, introduce China’s social economy and culture, and then provide a strong public opinion environment for China’s energy foreign cooperation. The most important thing is to make the mainstream views of China in the field of energy go out



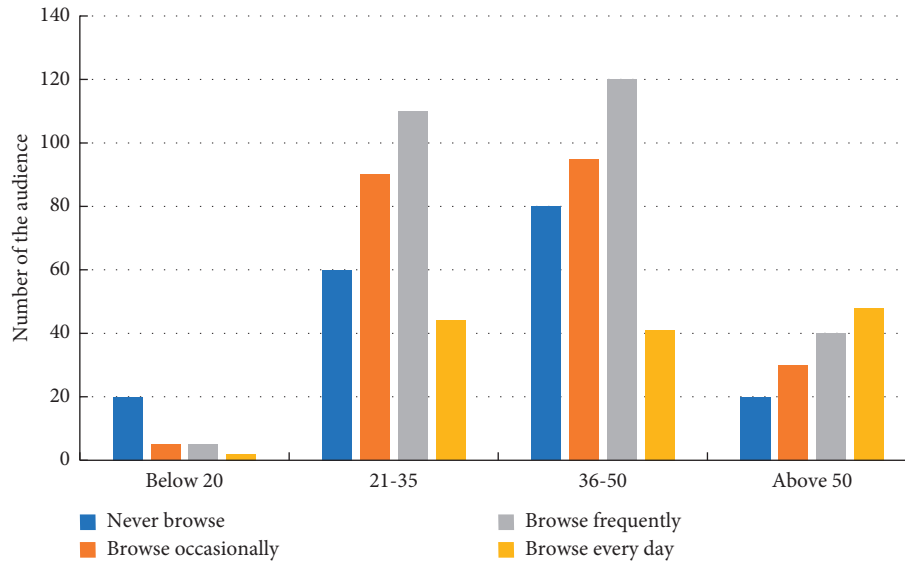


FIGURE 9: Differences in age composition of each frequency band.

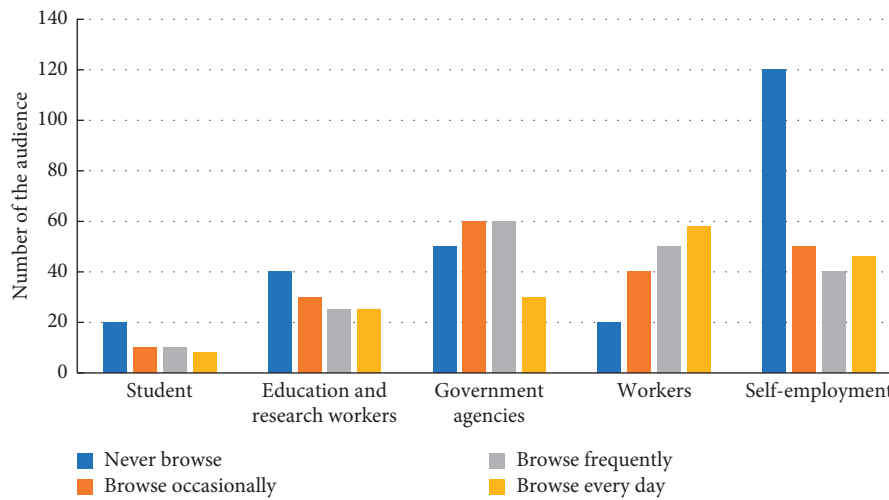


FIGURE 10: Differences in occupational composition in each frequency band.

and to make China’s loud voice in the international energy public opinion field. The specific approach is to give full play to the role of Chinese energy experts and think tanks, through various combinations such as publishing research reports, accepting exclusive interviews, publishing current political comments in the energy field, and using the internationally influential media or international media to make a clever voice.

**4.3. Building a National Energy Public Opinion Monitoring and Judgment Mechanism.** Energy is a highly complex field of expertise. Energy public opinion also presents a highly complex form. It is of great significance to establish a complete set of efficient national energy public opinion monitoring and research mechanisms, institutions, top-level design, and comprehensive overall planning. From the perspective of public opinion content, energy public opinion

is closely related to international and domestic politics, economy, society, culture, ecological, and environmental protection and many other fields. Judging from the speed of public opinion dissemination, information in the energy sector is constantly changing rapidly, making it difficult to capture energy public opinion. From the perspective of the influence of energy public opinion, energy public opinion is in a typical “bipolar situation”: ordinary public opinion is almost ignored except by professionals. However, once a public opinion crisis breaks out, it will cause a “domino” effect, from an energy public opinion crisis to comprehensive public opinion crises, economic crises, and social crises, seriously affecting the economic development within a country or region and even internationally, seriously affecting people’s market expectations and even ultimately affecting the trend of internal politics and international relations within a country. Building a responsive energy public opinion monitoring and research mechanism is not

only the needs of the energy industry itself, but in the long run, it is also an important measure to face the future, increase the energy system's ability to fight risks, and enhance the country's overall security capabilities.

## 5. Conclusion

- (1) At present, the energy news of China has the characteristics of substantial content, rich types, and a high proportion of originality. Nearly half of the published content is original content. But there is little information released on holidays. The amount of information released is greatly affected by holidays, and the amount of information released on Saturday and Sunday is quite different from working days. However, users have more time at their disposal on weekends and other statutory holidays. Increasing reading demand and decreasing information release volume are not conducive to consolidating audiences. It is recommended to increase the number of staff on duty during the holidays and to open a special column on weekends to better meet the audience's reading needs on rest days.
- (2) Energy news information is more popular among males. Males not only have more news information than women but also have a higher browsing frequency than women. Second, energy information is more popular among people under the age of 20. The influence effect is weak. Third, the browsing frequency of the student group is low, and the education, scientific research workers, government agencies, and public institutions personnel have a high browsing frequency.

## Data Availability

The figures and tables used to support the findings of this study are included in the article.

## Conflicts of Interest

The authors declare that they have no conflicts of interest.

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