Research on the Communication Effect of Graphical Financial News under the Threshold of Visual Communication

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Abstract: In the post-epidemic era, the instability of financial markets has intensified and people's production life has been affected, and financial news as hard news has received more and more attention. We observe that the use of charts in financial news reports has increased significantly in recent years. Based on this phenomenon, this study adopts an audience survey method to investigate the communication effect of chart-based financial news. The study finds that the readability of financial news with charts is positively correlated with the comprehensibility and the willingness to like and retweet of the audience, and further analyzes the influencing factors, based on which we propose the way forward and the risk of financial news dissemination nowadays.

Keywords: visual communication, financial news, cognitive contention

1 Introduction

With the arrival of the new all-media era, traditional financial news reporting and dissemination have been difficult to achieve the desired effect. More and more financial news adopts innovative forms such as charts, figures, and drawings as the main content of news, and also adopts the form of descending narration in content expression. Comprehensive financial reports are especially different from the reports of professional financial newspapers, which strive to pursue civilianization, use more charts and reduce the text in financial reports to make the content more understandable and better attract the audience's attention, as well as enable the general public to obtain information more quickly.

2 Literature Review

2.1 Review of visual communication research

The American scholar Bruce McCormack defined visualization in 1987: "the use of computer graphics to create visual forms that allow data representations to be presented in a

way that is more understandable to the general public". Therefore, traditional news evolved into digital news and graphic news based on this, the core of which is to interpret relevant data through clear and concise graphics, so that ordinary people no longer resist news.

In recent years, China's visual communication research has focused on five main areas: the narrative art of video, live video in multiple forms, visual communication, and visual rhetoric, research on the media practice of sound, and audiovisual technology and news production. From the perspective of journalism alone, due to the changing landscape of technology-enabled journalism, research on the real path of news reporting in the digital era has gradually increased in recent years, while research on the abstract theoretical level has decreased in comparison. For example, Professor Peng Lan once published an article "Video Survival: The Mediatization of Daily Life in the Mobile Era", emphasizing the important impact of video on modern life. In addition, metaverse and virtual embodiment have become hot topics in the field of audiovisual communication, and Professor Peng Lan's "Mixing the Real and the Virtual: Space and Body in the Metaverse" has discussed them in depth. It is also worth noting that the regulation of technology and platform governance has received widespread attention in recent years, and a large number of scholars have raised the hidden worries of technological dependence, including privacy leakage, infringement, and implosion of the real and the virtual.

However, in general, the academic community has less interest in the form of chart journalism that people first hoped for, especially the application of charts for financial news reporting, represented by Liu Jialu's "The Use of Charts in Financial News Reporting: A Case Study of Urban General Newspaper's Coverage of Alibaba's IPO", although it deals with the form of chart reporting in financial news, it Although they mainly focus on the analysis of individual cases, they do not explore the motives of visual presentation of charts and the social psychological basis of visual communication.

2.2 Review of financial news research

The research on financial news in China has been booming since the reform and opening up to the beginning of the new century. Professor Lan Hongwen predicted at the beginning of the century that the technological content of financial news reporting would increase in the 21st century and suggested that graphic news would be useful in financial reporting; Professor Chen Lidan and Professor Li Liangrong both emphasized the conceptual changes in financial news reporting, both pointing to intuitiveness and explanation; from the perspective of financial news practice, Professor Liu Jianming, Professor Luo Yicheng and Professor Shan Bo all proposed From the perspective of financial news practice, Professors Liu Jianming, Luo Yicheng, and Shan Bo have proposed three key points, namely, audience orientation, living and constructive. To date, domestic research on financial journalism still focuses on the above perspectives.

In addition, the reshaping of the Internet-empowered communication ecology and the digitalization and visualization transformation of financial news based on the characteristics of the fusion media era have aroused thinking from multiple perspectives in the academic field.

At present, domestic scholars mostly start from the dilemma of financial news communication under different perspectives and seek innovative paths, which are more often reflected in constructive aspects. For example, scholars such as Liang Wenrui and others point out in "The Predicament and Strategic Innovation of Financial News Visualization from the Perspective of User Experience" that financial news adopts corporate or political perspectives, more technical terms, and more data references, and through analyzing the successful practice cases of Southern Financial All Media Group, they conclude that financial news communication needs to start from the orientation of user thinking, and at the same time give full play to the interactive advantages of new media platforms and use the innovative strategy of visualization to attract users' attention. By analyzing the successful practice cases of Southern Financial News Group, it is concluded that financial news communication needs to be oriented from users' mindset, and at the same time play the interactive advantages of new media platforms and use visualization to attract users' attention. Some scholars also emphasize the need to change the narrative language of financial news from the perspectives of "humanistic care" and "humanism", such as Ye Xiaoli and Chen Cheng, who advocate that financial news should be "viewed downward" and write human stories. For example, Ye Xiaoli and Chen Cheng advocate that financial news should be "downward-looking", write human stories, analyze the deeper reasons behind the phenomena, and serve the public effectively.

Although the entry points are different, most scholars have expressed concern that financial news nowadays is too much about the pursuit of form and neglects content construction, and called on the industry to pay attention to content quality.

To sum up, this paper will start with visual communication theory, try to analyze the social psychological basis of visual communication and explore the communication mechanism of financial news based on a such premise, and then analyze the impact of this visual expression form on the communication effect of financial news.

3 Research Hypothesis and Research Methodology

3.1 Asking the question

Why does financial news use rich charts as the main body of content? What impact do different charts have on the communication effect of financial news?

3.2 Making Hypothesis

Based on the above questions, the following hypotheses are proposed.

H1: The stronger the visual readability of financial news, the easier it is for the audience to understand.

H1a: The more intuitive the graphical image of financial news, the easier the audience

understands the news.

H1b: The more colorful the charts of financial news, the easier it is for the audience to understand the news.

H1c: The richer the chart type of financial news, the easier it is for the audience to understand the news.

H2:The more visually readable the financial news is, the more willing the audience is to click on it.

H3:The more visually readable the financial news is, the more likely the audience is to retweet and share it.

3.3 Questionnaire survey

This study adopts the questionnaire method, which is a more widely used method in social surveys at home and abroad. A questionnaire is a form used for statistical and survey purposes, in which questions are formulated in the form of a set of questions. The questionnaires were distributed to a simple random sample of main users of social platforms such as QQ, WeChat, and Weibo.

This study completed the data collection, collation, and analysis process on October 3, 2022, and the survey was mainly based on open-ended questions, this questionnaire contains 10 questions, all in the form of an NPS five-level scale. The questionnaire was distributed online through social platforms such as WeChat, QQ, and Weibo.

4 Results

4.1 Chart elements and readability

A total of 309 samples were collected in this questionnaire survey. Through Pearson correlation analysis, it was found that in the first financial news, the intuitiveness of the financial news chart image and the richness of chart color showed a significant positive correlation with its comprehensibility ($r=0.361$, $p=0.000$; $r=0.467$, $p=0.000$), which indicates that the more intuitive the financial news chart image and the richer the chart color are, the easier the financial news is for the audience to understand. This indicates that the more intuitive and colorful the charts are, the easier the financial news is for the audience to understand, and the research hypotheses H1a and H1b are supported.

After downscaling "readability" to "image, color, and type", the results of the analysis prove that the elements contained in the chart itself are related to the communication effect, firstly, they have an impact on the audience's understanding of the news content.

4.2 Readability and Communication Effectiveness

The readability of the financial news is averaged with the intuitive image of the chart and the rich color of the chart to generate a new variable "readability", and Pearson correlation analysis is conducted between the readability and the audiences' willingness to like, retweet, and understand the news. This indicates that the research hypotheses H1, H2, and H3 have been verified, that is, the stronger the readability of financial news, the easier it is for audiences to understand, and the more likely they are to like and retweet it.

The hypothesis is confirmed after downscaling "communication effect" to "willingness to like and retweet". This indicates that the more readable a chart-based financial news is, the more it will attract the audience's attention, which will in turn promote the further dissemination of financial news through likes and retweets.

5 Summary

This study investigated the communication effect of financial news in the form of charts through an audience survey and tried to analyze the reasons for using charts in financial news and the influence of different charts on the communication effect. The study found that the more visual, colorful, and richer the charts of financial news are, the easier the audience understands the news and is more willing to like and retweet it. In this process, the logic of communication permeates, that is, attracting the audience's attention is the motivation of news communication, and ultimately influencing the audience's perception or behavior and obtaining feedback is the purpose of news communication. In the financial news communication process centered on "audience", there are complex influencing factors.

5.1 "Limited cognition" triggers selective psychology

According to information processing theory, people consume cognitive resources in the process of filtering, processing, and handling information, and the limited cognitive resources determine the upper limit of information that people can handle, once the information is overloaded, the information will compete with each other for processing resources, thus causing difficulties in cognitive operation. Therefore, people tend to avoid the situation of information overload and thus reduced decision-making performance for the sake of ensuring the normal operation of daily life, which triggers the daily selective mentality of the audience. Due to the scarcity of human attention and limited cognition, if the information produced does not attract the subject's attention, it will not enter the human perceptual system for information processing, and then communication will not be possible. Researchers have demonstrated that "human visual processing of information begins with the acquisition of the most basic image features, such as color, brightness, texture, and distribution, from a two-dimensional image array." This research

result gives the insight to enhance attention and is also consistent with the analysis results of this paper.

In "From "Opinion War" to "Cognitive War": Theoretical Definition and Practical Paradigm of Cognitive Scramble", Professor Yu Guoming first proposed the concept of "cognitive scramble" on the basis of information processing theory. The concept of "cognitive scramble" was first proposed in "Cognitive Scramble" based on information processing theory, which refers to the competitive scramble for limited cognitive resources of individuals by various types of information in the communication environment. The "cognitive limitedness" of the audience is expressed as "social media burnout" or even "information overload depression" after information overload. This provides a new research angle and theoretical grip for the shift of visual communication of financial news.

According to Schramm's contingency formula for media choice, "guarantee of reward" and "effort" are both factors that people consider when choosing media, and in the case of financial news, which is a type of hard news with a low level of audience involvement, a large amount of text and jargon will increase the audience's information processing effort. In contrast, graphical financial news is characterized by "clear and concise graphics", which reduces the difficulty of information acquisition and increases the intake of effective information, making it a better choice for audiences. Further, with the advent of the "image world", the generation that grew up with the stimulation of television images has become the main target group of today's financial news coverage, and their perception of and reliance on charts has never been greater. The richer the form and color of the chart, the stronger the stimulation to people's senses, and the deeper the cognition by strengthening the impression.

Due to the human physiological basis of "limited cognition", the "cognitive competition" of communication activities has become the social psychological premise and logical starting point for the effectiveness of financial news communication of charts and graphs.

5.2 Charts become social capital

From the perspective of cognitive-communication, social media users like and retweet a news item based on the brain's stimulus-response when receiving information. In addition, within the same group, assuming that the total amount of daily information circulating within the group is in dynamic balance, lengthy textual reports will encroach on the remaining information space, making it impossible for users to obtain comprehensive and sufficient information to meet their daily needs based on their limited attention and cognitive ability. Therefore, graphic news with its high recognition, high information volume, and high readability becomes the priority choice of group members, thus achieving the rapid proliferation of graphic news.

At the same time, communication is also socially related. Before making the decision of whether to like or forward the news, individuals have to make a judgment on the usefulness of the information through the comprehensive consideration of their own existing experience, knowledge, and social habits, and make three considerations before entering the dissemination

of the information: the need to maintain social interaction, the need to exchange social resources, and the need to strengthen the connection with the circle they belong to.

The first is the social convenience brought by the chart. Marx clearly pointed out that the only bond that connects man to society is natural necessity, and is a need and private interest. In the process of satisfying one's material and spiritual needs, man gradually forms "sociality", and the characteristics of "sociality" require a man to actively maintain his own social identity and social relations, as a "communication symbol As a "communication symbol", the chart becomes the content choice of people's active communication behavior by virtue of its clear and concise advantages.

The second is the chart of social capital. In the view of some scholars, social media actors can only transform the social relationships they have among themselves into a kind of "obligatory" benefit return by continuously investing the necessary time and energy to expand and maintain the social relationship network formed through social media. This in itself becomes one of the basic motivations for communication behavior.

Lastly, the role of graphical communication is in strengthening the relationships of the circle group. Internet users purposefully join groups that match their material or spiritual needs according to their own situation, and the homogeneity of information within the group is often strong, while the eye-catching and concise form of charts becomes an effective way to grab people's attention compared with textual information. This further strengthens the connection between the individual and the group.

6. Reflection

In the era of media convergence, the trend of news visualization has been an indisputable fact. The view of financial news is to make people see and understand and deepen their impression, so as to enhance its own attractiveness and user stickiness, which is also in line with the trend of new all-media development and transformation, thus providing a basic direction for the reporting of financial news in our present era.

Although the immersive news mode supported by VR and AR technologies has been introduced into the news production process, the graphical form still has its inescapable value as the main reporting method of financial news. The impact of its elements on the readability of financial news reveals that in order to communicate more effectively, we should pay attention to the design and application of charts, enrich the content and expression form of charts, increase the sensory stimulation to users and enhance the communication effect. At the same time, the news media is responsible for the mission of conveying social information, so it should always adhere to the orientation of user thinking and effectively serve the people.

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