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Social Media Use and Regional Image Perception: An Empirical Study Based on the Gansu Image Perception Questionnaire Survey

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Abstract: This study, using Gansu Province in China as a case, explores the impact of social media use on regional image perception. It finds that social media enhances users' perceptions of economic, political, cultural, and environmental images, indirectly increasing their satisfaction with the Gansu region. The research shows that social media plays a positive role in constructing regional images, particularly through user-generated content on short video platforms, which is more attractive and shareable. Among these, environmental and cultural images have the most significant impact on regional image compared to economic and political images. Therefore, it is recommended that regional governance bodies shift their promotional strategies to stimulate internet users' creative enthusiasm to improve the effectiveness of regional image dissemination.

Keywords: regional image; social media; Gansu; China; dissemination effectiveness

1. Introduction

Since the 1980s, a new public management movement known as “reinventing government” has emerged in developed Western countries, which places emphasis on government and regional image as objectives of this movement [1]. Regional image represents the soft power of a region and plays an important role in attracting investment, showcasing governance, and facilitating external communication and development, thus drawing the attention and emphasis of various regional government organizations.

Before the rise of social media, the construction of regional image relied primarily on traditional media, with research on regional image predominantly focusing on content analysis of traditional media news reports. With the development of media technology, there has been a significant shift from traditional media to social media platforms, resulting in a disruptive change in the media environment. Social media has become the main channel for individuals to access, share, and produce information, with PGC (Professionally Generated Content), UGC (User Generated Content), OGC (Organizational Generated Content), and AIGC (AI Generated Content) forming important components of social media. Media content has also become increasingly visual. Has this disruptive change in the media environment altered people's perception of regional image? Specifically, has the use of social media increased or decreased people's satisfaction with regional image? What is the emotional inclination when presenting regional media images on graphic and short video social media platforms? What are the key elements in the formation of regional image perception? This study

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will answer these questions through an investigation of internet users' perceptions of the regional image of Gansu Province, China.

2. Literature Review and Research Hypotheses

2.1. Media Image and Regional Image

Walter Lippmann's concept of "pseudo-environment" points out that mass communication activities construct an information environment that shapes our perception of the real world, but this information environment is not an objective representation of reality; it is a result of selective presentation by mass media. Over time, individuals inevitably perceive the information environment created by mass communication as an important part of reality. In today's rapidly deepening media socialization and social mediaization, people increasingly rely on mass communication and various media to perceive the world. The influence of mass media is greater than that of interpersonal communication, especially in understanding macro-level situations beyond direct experiences [2]. The media image constructed by mass communication is an important pathway through which individuals subjectively perceive the objective world, and this importance has been increasing with growing reliance on media [3].

In the traditional media era, regional media image was primarily shaped through television, newspapers, and films. Previous studies often selected influential news media or film works within the region or country as research samples, analyzing texts or content to extract the construction of regional media image. However, regional media image is not equivalent to regional image; individuals also perceive regional image through their personal experiences (e.g., actual visits, interpersonal interactions, participation in work) when they encounter media-constructed regional image information. Furthermore, after receiving the media image information, there exists a "decoding" process where individuals use their existing knowledge and unique experiences to interpret regional image. Therefore, regional image is not an objective fact but should be regarded as a cognitive category—individuals' perceptions and understandings of regional image. This study focuses on people's perceptions and understandings of regional image, while using the presentation of regional media image as an important reference for audience survey design.

2.2. Social Media and Regional Image Perception

With the arrival of the social media era, the media ecology has undergone significant changes. As of June 2024, the number of instant messaging users in China reached 1.078 billion, accounting for 98% of the total internet users; short video users reached 1.050 billion, making up 95.5% of the total [4]. Social media has become the leading application on the internet in terms of both user numbers and usage time. It has integrated various aspects of daily life and work, including news acquisition, political participation, brand marketing, cultural production, social interaction, and entertainment, becoming a window and bridge for users to perceive and understand the world. The UGC (User Generated Content) model is a distinctive feature of social media [5]. Social media allows users to connect with both strong and weak ties, facilitating communication and increasing opportunities to encounter content and information about various regions, which is considered non-commercial, more candid, or direct. Empirical research has found that the type of media exposure (new media) has a significant impact on users' views of domestic political image and certain dimensions of economic and cultural image [6]. However, existing studies on regional image have insufficiently considered the role of social media in the formation of regional image.

The popularity of short videos has led to an increasing number of users uploading personal life and entertainment short videos on platforms like Douyin and Kuaishou, allowing for a more vivid and dynamic display of regional image. The massive growth

of UGC videos provides qualitatively different resources for constructing regional image and offers a new framework for internet users to perceive regional image.

As an indispensable and primary platform in daily life, users have become accustomed to obtaining various information about their region and others through social media, including politics, economy, society, and culture. Therefore, we hypothesize that social media use can enhance users' perception and satisfaction with the image of Gansu.

Based on this, we propose the following hypotheses:

H1-1: Social media use can enhance the social image of Gansu.

H1-2: Social media use can enhance the political image of Gansu.

H1-3: Social media use can enhance the economic image of Gansu.

H1-4: Social media use can enhance the cultural image of Gansu.

Scholarly understanding of the concept of regional image is relatively unified: "The image of a place is the sum of people's beliefs and impressions about that place. [7]" "The internal public and external public of a region have specific perceptions, overall views, and comprehensive evaluations of the region's internal comprehensive strength, external vitality, and future development prospects. [8]" "Regional image is the public's overall perception and comprehensive evaluation of a region. [9]" Thus, regional image is a result of public cognition, primarily manifested in people's satisfaction with the regional image. The categorization of regional image can be somewhat vague, encompassing international regional organizations, countries, local administrative regions (provinces, cities, counties), and tourist destinations; it can also be based on shared history, culture, economy, and geographical connections, such as the Silk Road Economic Belt, Greater Bay Area, and Northeast region.

The study of regional image covers various angles, often involving media image construction, regional political governance, regional economic development, tourism brand communication, cultural promotion, regional brand marketing, discourse rhetoric construction, and visual design. Current research on tourism brand communication, urban brand image, and national image construction is relatively rich, providing many reference scales. However, a mature measurement index system for provincial image has yet to be established.

This study posits that the components of provincial regional image are most similar to national image and can be analyzed mainly from the dimensions of social, political, economic, and cultural images, with the distinction being that provincial image downplays the dimensions of leadership, military, and diplomatic image. Thus, we propose the following hypotheses:

H2-1: Social image can enhance satisfaction with regional image.

H2-2: Political image can enhance satisfaction with regional image.

H2-3: Economic image can enhance satisfaction with regional image.

H2-4: Cultural image can enhance satisfaction with regional image.

In summary, this study references existing research to propose a hypothetical model (Figure 1) [10], which shows the relationships between the independent variable (social media use), mediating variables (social image, political image, economic image, cultural image), and the dependent variable (regional image satisfaction).

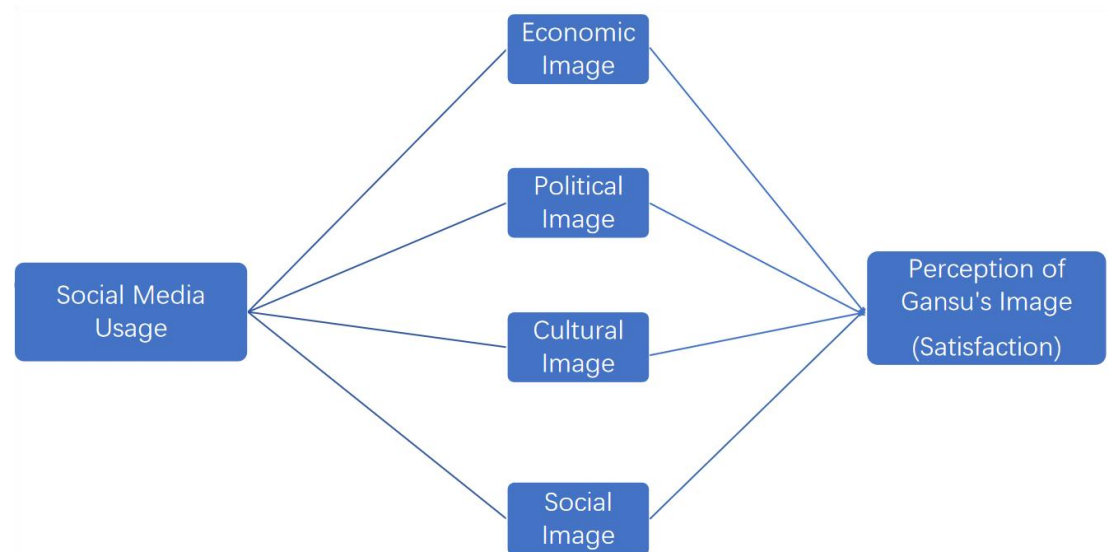


Figure 1. Hypothesis Model of Social Media and Regional Image Perception.

3. Research Methods

This study will conduct a sentiment analysis of the content presented by major social media on Gansu's image and will further obtain user perception data through a questionnaire survey.

3.1. Questionnaire Design

The first part of the questionnaire collects basic personal information, including gender, residence area, age, education level, occupation, and after-tax annual income. The second part addresses media usage (using a Likert 5-point scale), including the frequency of social media use (WeChat, Weibo, Xiaohongshu, Zhihu, etc.), visual social media (Douyin, Kuaishou, Bilibili, etc.), and traditional media. The third part focuses on regional image perception (using a Likert 5-point scale); the fourth part evaluates regional image satisfaction (1 being the lowest, 10 the highest). The study of regional image involves various dimensions and elements. B Zhu et al. tested the reliability of a 16-item Likert scale that included four main components (social image, political image, economic image, cultural image) when researching national image [11]. We removed items not aligned with regional image, including six items related to national defense and military strength, foreign policy, respect for intellectual property, civilized behavior while traveling abroad, quality education, and diligent work. We supplemented important items, mainly focusing on political democracy, fair and open markets, technological development, abundant historical and cultural resources, prosperous cultural industries, tourism, and gastronomy, resulting in 17 items. Two sets of reverse questions were also included to ensure high-quality responses.

3.2. Pre-Survey and Formal Survey

The questionnaire was distributed through online random sampling. The survey period was from August 13 to 24, 2022. To ensure the reliability and validity of the questionnaire, a pre-survey was conducted through a snowball method among friends and distributed to a graduate class at a certain university in the West, recovering 122 responses. After filtering out invalid responses, 65 valid responses remained, resulting in an effective response rate of 53.28%. Data analysis was performed using IBM SPSS Statistics 24. The Cronbach's Alpha coefficient for the 17 items was 0.941, indicating high reliability. Principal component analysis was conducted, resulting in four factors through the maximum variance method. One item (Gansu has abundant historical and cultural resources) could not be categorized into any factor and was therefore removed.

The remaining items met validity requirements. Through Tencent Questionnaire, a total of 410 responses were collected. After the pre-survey, one item was removed, allowing the valid responses from the pre-survey to be included in the formal analysis. In total, 532 responses were recovered. After identifying invalid responses, 282 valid responses remained, with an overall effective rate of 53%. This study’s response rate is noticeably lower than typical online surveys, primarily due to the increasing number of respondents seeking monetary rewards for completing surveys, known as “sheep shearing.” To address this, the questionnaire intentionally increased the number of reverse questions, allowing the identification of many invalid responses. Thus, although the effective response rate is below average, the quality of the valid responses is higher.

After conducting reliability and validity analysis on the 16 items in the valid responses, the Cronbach's Alpha coefficient for the Gansu regional image measurement items was found to be 0.936, indicating high reliability. KMO and Bartlett's test results showed significant correlations between variables (Sig=0.000) and a KMO of 0.935, indicating strong correlations, which suggest that the 16 indicators of Gansu image are suitable for exploratory factor analysis. Principal component analysis extracted four factors, accounting for 73.098% of the variance, named as economic image (5 items), political image (5 items), cultural image (3 items), and environmental image (3 items).

3.3. Sample Basic Situation

In the sample, the gender distribution was 46.5% male and 53.5% female, with slightly more females than males. Age distribution was as follows: under 19 years old (7.1%); 20-29 years old (33.0%); 30-39 years old (39.4%); 40-49 years old (13.1%); 50 years and above (7.4%). Educational distribution was: middle school and below (3.5%); high school/vocational school (16.0%); associate degree (17.7%); bachelor’s degree (47.9%); master's degree and above (14.9%).

Users from the eastern, central, and western regions accounted for 47.9%, 25.5%, and 26.6%, respectively. According to the seventh national population census report by the National Bureau of Statistics, as of November 1, 2020, the population distribution in China was 43% in the eastern region, 30% in the central region, and 27% in the western region. The distribution of internet users responding to the effective questionnaire was approximately 48% in the eastern region, 24% in the central region, and 28% in the western region, which is consistent with the national population distribution [12].

Table 1. Basic Demographic Situation of the Sample.

Gender	Percentage	Occupation Type	Percentage	Region	Percentage
Male	46.50	Student	26.24	Eastern	47.9
Female	53.50	Government Staff	3.90	Central	25.5
Age	Percentage	Business Manager	14.89	Western	26.6
Under 19	7.10	Office Worker	20.92	After-tax Income(¥)	Percentage
20~29	33.00	Professionals	7.45	Under 50,000	34.8
30~39	39.40	Ordinary Workers	4.61	50,000-100,000	31.9
40~49	13.10	Service Industry	3.19	100,000-150,000	11.3
50+	7.40	Self-employed	4.26	150,000-200,000	7.4
Education	Percentage	Freelancers	6.74	Above 200,000	6.7
Middle School and Below	3.50	Agriculture Workers	1.77	Not Disclosed	7.8
High School	16.00	Retired	2.13		
Associate Degree	17.70	None	3.55		
Bachelor’s Degree	47.90	Others	0.35		

Master's degree
or above 14.90

In related studies, when demographic variables are treated as control variables, their impact on regional image perception is generally weak; therefore, they are not analyzed as control variables in this study [13].

3.4. Variable Measurement

3.4.1. Dependent Variable: The dependent variable is the overall satisfaction of users with the image of Gansu (using a 10-point scale, with 1 being very dissatisfied and 10 being very satisfied).

3.4.2. Independent Variable: The independent variable is the average frequency of users' social media use (WeChat, Weibo, Xiaohongshu, Zhihu, etc.) and video social media use (Douyin, Kuaishou, Bilibili, etc.) measured on a 5-point scale, representing the level of social media use.

3.4.3. Mediating Variables: The mediating variables include four common factors and 16 items. The economic image comprises five items: (1) Gansu's public infrastructure (bridges, roads, etc.) is complete; (2) Gansu has a good employment situation; (3) Gansu's technology development is sound; (4) Gansu's overall salary level is high; (5) Gansu's market is fair, open, and dynamic. The political image consists of five items: (1) Gansu's social equity, stability, and harmony; (2) Gansu government officials are honest and trustworthy; (3) Gansu government departments efficiently and effectively fulfill their functions; (4) Gansu has a good democratic political construction; (5) Gansu's emergency rescue measures for major disasters and accidents are complete. The cultural image includes three items: (1) Gansu's tourism is attractive; (2) Gansu's cuisine is appealing; (3) Gansu's cultural industry is flourishing. The environmental image includes three items: (1) Gansu has good relationships with neighboring provinces; (2) Gansu people are honest, hardworking, friendly, and civilized; (3) Gansu emphasizes ecological and natural resource protection. Each item uses a 5-point scale.

4. Research Results

4.1. Descriptive Statistics

4.1.1. Internet Users' Media Usage

Internet users' use of social media far exceeds that of traditional media and news websites. The questionnaire results align with national survey data regarding users' usage of social media, video social media, and traditional media (Table 2). 92.6% of internet users rated their social media usage at 3 points or above (1 representing rarely used, 5 representing frequently used) (Table 3).

Table 2. Internet Users' Media Usage Situation.

Media Usage	Mean	Standard Deviation
Social Media (WeChat, Weibo, Xiaohongshu, Zhihu)	4.45	0.954
Video Social Media (Douyin, Kuaishou, Bilibili)	4.03	1.213
Overall Social Media Usage	4.24	0.893
Traditional Media (TV, Radio, Magazines, Newspapers)	2.54	1.175
News Websites (Toutiao, UC Browser)	2.83	1.339

Table 3. Overall Social Media Usage Situation among Internet Users.

Usage Frequency	Number of Responses	Percentage	Valid Percentage	Cumulative Percentage
1	2	0.7	0.7	0.7
1.5	4	1.4	1.4	2.1
2	5	1.8	1.8	3.9
2.5	10	3.5	3.5	7.4
3	19	6.7	6.7	14.2
3.5	26	9.2	9.2	23.4
4	54	19.1	19.1	42.6
4.5	44	15.6	15.6	58.2
5	118	41.8	41.8	100
Total	282	100	100	

4.1.2. User Perception of Gansu Media Image—Satisfaction Analysis

The average satisfaction rating for Gansu's image among internet users was 7.50, with a standard deviation of 1.558. Nearly 80% of users rated their satisfaction with Gansu's image at 7 points or above (Table 4).

Table 4. User Satisfaction with Gansu Image.

Satisfaction	Number of Responses	Percentage	Valid Percentage	Cumulative Percentage
1	3	1.1	1.1	1.1
3	2	0.7	0.7	1.8
4	7	2.5	2.5	4.3
5	12	4.3	4.3	8.5
6	34	12.1	12.1	20.6
7	63	22.3	22.3	42.9
8	100	35.5	35.5	78.4
9	36	12.8	12.8	91.1
10	25	8.9	8.9	100
Total	282	100	100	

4.2. Regression Analysis

To test whether social media usage directly influences users' perception of Gansu's image and whether economic, political, cultural, and environmental images mediate the relationship with user satisfaction regarding Gansu's image, this study utilized the mediation effect testing method recommended by Hayes and employed the Process plugin in SPSS. Model 4 was selected, treating overall social media usage as the independent variable and user satisfaction with Gansu's image as the dependent variable, with economic, political, cultural, and environmental images as mediating variables. The confidence interval was set at 95%, with 5000 bootstrap samples. The results showed $R^2 = 0.482$, $MSE = 1.280$, $df1 = 5.000$, $df2 = 276.000$, $p = 0.000$; the direct effect $\beta_1 = 0.148$, $se = 0.081$, $CI = [-0.13, 0.308]$, which is not significant; the total indirect effect $\beta_2 = 0.418$, $se = 0.069$, $CI = [0.289, 0.5642]$, which is significant(Figure 2). The mediating variables showed a complete mediation effect. Thus, the test results support hypotheses H1-1, H1-2, H1-3, H1-4, and H2-1, H2-2, H2-3, H2-4.

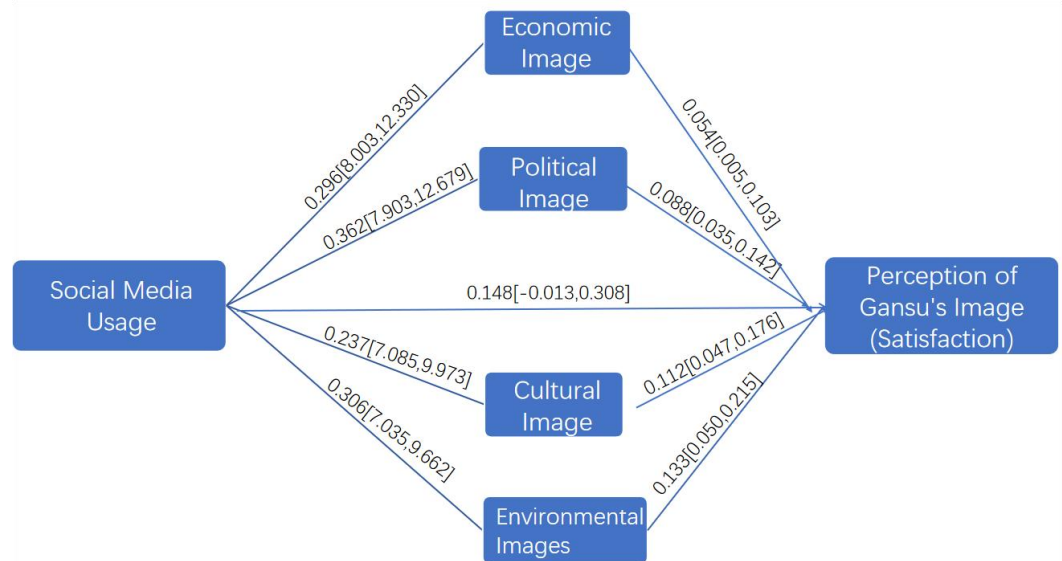


Figure 2. Results of Model Regression Analysis.

5. Conclusions

5.1. Social Media Generally Plays a Positive Role in Presenting Regional Media Image

Compared to traditional media, social media has a more positive role in constructing the image of Gansu. On short video platforms like Douyin and Kuaishou, users have created a wealth of vivid, lively, and interesting content showcasing Gansu's image, which is more attractive and easier for internet users to like, accept, and disseminate than traditional news, information, and promotional videos.

5.2. The Significant Mediating Effect of Social Media Usage through Economic, Political, Cultural, and Environmental Image Perception on Gansu Image Satisfaction

Users' social media usage cannot directly predict satisfaction with Gansu's image; rather, it predicts satisfaction through the mediation of economic, political, cultural, and environmental images. In terms of the elements constituting satisfaction with Gansu's image, the order of importance is as follows: environmental image, cultural image, political image, and economic image. Compared to economic and political images, the environmental image (relationships with other provinces, the friendly image of Gansu people, ecology and natural environment) and cultural image (such as tourism, cuisine, cultural industry) have a more pronounced impact on constructing regional image.

5.3. Strategies for Enhancing Gansu's Image

In the current wave of user-generated content on short video platforms, a large amount of UGC plays a positive role in disseminating regional images. Successful cases of city promotion through Douyin in cities like Xi'an, Chengdu, and Chongqing illustrate this [14]. Regional governance entities need to shift away from the past mindset of having the government as the primary promoter of regional image, instead effectively mobilizing internet users' creativity through efficient mechanisms. By leveraging the influence of internet celebrities and smaller influencers, they can enhance the effectiveness of regional image communication and achieve successful dissemination of regional image under the logic of short videos and algorithms.

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