

How does Internet Use Affect Citizens' Social Attitudes: An Empirical Research based on CGSS Data

Binghang Li

School of Art and Science, University of Washington-Seattle, Seattle, USA

bli2002@uw.edu

Abstract. With the consistent development of the Internet industry and the rapid expansion of the netizens' scale, the influence of the Internet on the public and their attitudes towards society becomes more profound. As a platform for public discussion and communication, the Internet is also an imperative way to shape the attitude of civil society. By virtue of CGSS data, this paper explores how the frequency and ability of Internet use affect citizens' social attitudes via multiple linear regression and factor analysis. At the same time, this study also analyzes the influence differences among various Internet use capabilities.

Keywords: Internet Use; Frequency; Ability; Social Attitude; Happiness; Fairness; Social Trust.

1. Introduction

Since the 21st century, the Internet has been prevalent. Up against the rapid expansion of users, it has become inseparable from people's lives. According to the 48th *China Statistical Report on Internet Development*, the number of Internet users in China reached 1.032 billion as of December 2021, an increase of 42.96 million compared with December 2020 when the Internet penetration rate was 73.0%. Accompanied by the continuous development of the Internet industry and the rapid expansion of netizens' scale, the influence of the Internet on the public and their attitudes towards society is further deepening. (Li, T., Huang, C. C., He, X. Q. & Zhou, K. G. 2008) (Ma, J. F. & Bai, C. Y. 2005) As a platform for public discussion and communication, the Internet is an imperative way to shape the attitude of civil society. Internet use is intertwined with citizens' social attitudes. (Li, L. L. & Wang, Y. C. 2021) On the network platform, people can not only share what they have seen and heard but also fully exchange opinions with each other. They can share information and discuss with like-minded netizens through "cyber groups" and "cyber post bar" (online forums). In the process of exchanging information, citizens' social attitudes are affected and fostered. (Li, X. P. 2021) (Lou, J. H. & Li, Q. 2022)

Due to the disparity in Internet use ability, there is a certain gap in the influence of Internet use frequency on social attitudes among diverse citizens. The huge amount of information provided by the Internet may not only help citizens to understand society more comprehensively and form a relatively objective and fair attitude, (Long, C. H. & Han, J. J. 2022) but also cocoon citizens in a single variety of information to form extreme social attitudes (Zhang, Y. L. & Liu, J. K. 2021). Moreover, because of the obvious differences in Internet use ability, perceiving the relationship between Internet use frequency and social attitude is helpful for us to understand whether Internet use ability has triggered the fragmentation of people's social attitudes to some extent (Long, C. H., Yi, C. Z. & Li, C. J. 2021) (Luan, S. J. 2017)

On this basis, this study attempts to explore how the frequency of Internet use affects citizens' social attitudes and the moderating role in the binary relationship between Internet use frequency and citizens' social attitudes. In addition, this paper discusses the variations of these influencing mechanisms in different age groups to explain the reasons for these differences. In this paper, a total of 12582 valid questionnaires from the China General Social Survey are used as data sources. Meanwhile, quantitative research methods are adopted in research methods, including factor analysis to analyze the Internet use frequency and Internet use ability, and multiple linear regression (OLS) to explore how the Internet and its use ability affect citizens' social attitudes.

The innovation of this paper mainly lies in the followings. Firstly, using the method of multiple linear regression, this paper systematically analyzes how the frequency of Internet use shapes citizens' social attitudes, among which citizens' happiness, social justice, and social trust constitute the analysis of social attitudes. Secondly, taking Internet use ability as a regulating variable, this paper deeply analyzes the regulating role of Internet use ability on social attitudes towards Internet and public Internet participation, further expounding the causal mechanism between Internet use and social attitude. Thirdly, with the factor analysis method, different dimensions of social attitude (citizen happiness, social justice, and social trust) are subsumed under the analysis category, which can reflect the relationship between social attitude and Internet use frequency more comprehensively.

The rest of this paper is organized as follows. The second part introduces the literature review and research hypothesis; the third part demonstrates the data sources and measurement methods of variables; the fourth part elaborates on the results of regression analysis and conclusions.

2. Literature Review and Research Hypothesis

The concept of social attitude is categorized in the field of social psychology, to the effect that it refers to a relatively stable view of the individual on the external environment, or "the subject's evaluation or attitude towards the whole society or its certain object". (Zhao, X. H. & Li, J. X. 2017) Psychologist David Krech puts forward several elements of attitude formation: (1) whether an individual's needs are met; (2) the information obtained by a certain object and the nature of the information source; (3) the influence of the group to which he belongs on his individual; (4) the personality traits of the individual. (Li, W. 2019) As for the measurement of social attitude, CGSS2017 regards happiness, social justice, and social trust as the three major indicators for measuring social attitude variables. In the CGSS2017 questionnaire, 21 indicators such as family status and luck constitute this part of subjective well-being. In this paper, social attitude is defined as an individual's cognition or feeling of the overall situation of the current society. Combined with the availability of data and the purpose of this study, the measurement dimensions of social attitude are divided into the following three aspects: happiness, social justice, and social trust.

Therefore this paper puts forward the following research hypotheses.

Research Hypotheses:

H1: There is a significant positive relationship between the frequency of Internet use and citizens' happiness.

H2: There is a significant positive relationship between the frequency of Internet use and citizens' sense of social justice.

H3: There is a significant negative relationship between the frequency of Internet use and citizens' social trust.

H4: Internet use ability has a positive moderating effect on the relationship between Internet use frequency and citizens' happiness.

H5: Internet use ability has a positive moderating effect on the relationship between Internet use frequency and citizens' sense of social justice.

H6: Internet use ability has a negative moderating effect on the relationship between Internet use frequency and citizens' social trust.

3. Data Sources and Variable Measurement

(A) Data Sources

This paper uses 12582 valid questionnaires from China General Social Survey as data sources. Chinese General Social Survey (CGSS) is the first nationwide, comprehensive, and continuous large-scale social survey project in China. In addition to collecting data from Chinese people and Chinese society regularly and systematically, it also summarizes the long-term trend of social changes and discusses social issues with great significance in theories and practices. Meanwhile, it aims to

promote the openness and inclusiveness of domestic social science research and provide data for government decision-making and international comparative research. China General Social Survey is jointly conducted by the Renmin University of China and academic institutions all over the country. Since 2003, more than 10,000 families across the country have been sampled every year. CGSS sampling is strict and scientific with representative data, which can truly reflect the real situation of the respondents. In order to ensure the quality of data and the accuracy of statistical analysis, the samples with missing values were deleted, with 11307 effective samples left.

(B) Variable Measurement

1. Dependent Variable

The dependent variable of this paper is citizens' social attitude, which includes three parts such as happiness, social justice, and social trust, together with six items. As for happiness, they are A36, generally speaking, do you think your life is happy? The corresponding options are over-unhappiness-1, relative unhappiness-2, hard to say-3, relative happiness-4, and over-happiness-5. Besides, according to the D40 question group, specific items are as follows. 1. Society will provide more and more opportunities for people; 2. As getting older, I have learned a lot from my life, which makes me stronger and more capable; 3. Most of the life goals I set can motivate me, instead of being discouraged; 4. I often feel like I'm just fooling around; 5. I don't know the significance of what I've done in my life; 6. I often feel particularly uncomfortable in my certain body parts; 7. Compared with the people around me, I'm content with my current situation; 8. I am satisfied with my family's income; 9. I often get bothered by trifles; 10. I'm very upset about my health; 11. I often find it difficult to build friendships with others; 12. I prefer my personality; 13. I seem to have fewer friends than most others; 14. I feel very happy with my family; 15. I'm less lucky than others; 16. I am very confident in social development; 17. I feel like I'm at a disadvantage in comparison with surrounding people; 18. When something bad happens, I can't keep my spirits up for a long time; 19. I am happy that my views have become more and more mature over the years; 20. Sometimes it's difficult for me to communicate with my family, including parents, lovers, children, etc; 21. I am satisfied with the natural environment around me. The corresponding options are quite disagreeable-1, disagreeable-2, a little disagreeable-3, a little agreeable-4, agreeable-5, and quite agreeable-6. As for social justice, the questions are A35, in general, do you think today's society is fair? The corresponding options are completely unfair-1, relatively unfair-2, hard to say-3, relatively fair-4, completely fair-5. In terms of social trust, the questions are A33, generally speaking, do you agree that most people in this society can be trusted? The corresponding options are quite disagreeable-1, disagreeable-2, a little disagreeable-3, a little agreeable-4, agreeable-5, and quite agreeable-6. Meanwhile, the C11 is also included, that is, do you think people are always trustworthy, or can't you be too careful when dealing with people? The corresponding options are as follows, you can't be too careful when dealing with people at all time-1, you can't be too careful when dealing with people usually-2, people can usually be trusted-3, people can always be trusted-4.

2. Independent Variable

The independent variable of this paper is the frequency of Internet use, which is measured by the C42 question group in the questionnaire. The specific items are 1. Social Activities, 2. Self-Presentation, 3. Network Action, 4. Leisure and Entertainment, 5. Access to Information, 6. Commodity Trading. The corresponding options are never-1, rarely-2, sometimes-3, often-4, always-5.

3. Regulating variables

The adjustment variables in this paper are Internet use ability, measured by the C41 question group in the questionnaire. The specific items are as follows: 1. I will use my computer to open the website; 2. I will use my smartphone to download and install the APP; 3. It is not difficult to find the information I want on the Internet; 4. When I see important news forwarded by people around me on the Internet (such as WeChat and Weibo), I will verify it before believing it; 5. When I want to express my thoughts on the Internet, I know how to operate it. The corresponding options are 1-very inconsistent, 2-inconsistent, 3-indifferent to be consistent or not, 4-consistent, and 5-very consistent.

Table 1. Variable Measurement

Variable Type	Variable Name	Measurement Item	Measure
Dependent Variable	Citizens' Internet Political Participation	If your rights are infringed, will you consider using the Internet to safeguard your rights?	1-Yes, 0-No
		Will you participate in and support the actions about Internet rights protection initiated by others?	1-Yes, 0-No
Independent Variable	Political Attitudes towards the Internet	The Internet enables people to have more political rights	1-Quite disagreeable, 2-Disagreeable, 3-Indifferent to be agreeable or not, 4-Agreeable, 5-Quite agreeable
		The Internet enables people to discuss government affairs more	
		The Internet enables people like you to better understand politics	
		The Internet enables government workers to better consider public opinions	
		The Internet can enable more people to obtain more social resources	
		Internet can promote social equity	
		Internet can break the solidification of social class	
Regulating Variable	Internet Usage Ability	I can use my computer to open the website	1-Very inconsistent, 2-Not consistent, 3-Indifferent to be consistent or not, 4-Consistent, 5-Very consistent
		I can use my smartphone to download and install apps	
		It is not difficult to find the information you want on the Internet	
		When I see important news forwarded by people around me on the Internet (such as WeChat and Weibo), I will verify it first before believing it	
		When I want to express my thoughts on the Internet, I know how to do it	
Control Variable	Individual Characteristics	Gender	1-male, 0-female
		Age	Actual age
		Education	0-no education at all, 3-literacy classes, 6-primary school, 9-junior high school, 13-vocational high school, 12-general high school, 13-technical secondary school, 13-technical school, 14-specialized higher education for adults, 15-specialized formal higher education, 16 undergraduate higher education for adults, 17 undergraduate formal higher education, 20-postgraduate and above
		Gross Personal Income	Actual income (ten thousand yuan)
		Political Identity	1-CPC members, 0-non-party members
		Household Registration Type	1-urban household registration, 0-rural household registration

The higher the score, the stronger the ability to use the Internet. In order to reduce the multicollinearity among independent variables, this paper adopts factor analysis to analyze five variables of Internet use ability, as shown in Table 3. The KMO measured by factor analysis is 0.865 and the Bartlett spherical test is significantly correlated at the level of 0.000, which indicates that the factor analysis logic is self-consistent.

4. Control Variables

In this paper, gender, age, health conditions, marital status, income, education, political identity, and household registration type are selected as control variables with data processing. Age is minus the year of birth from 2017. As for gender, 1-male and 0-female. As for health conditions, 1-very unhealthy, 2-relatively unhealthy, 3-average, 4-relatively healthy, 5-very healthy. As for income, the unit is 10,000 yuan. In terms of education, 0-no education at all, 3-literacy classes, 6-primary schools, 9-junior high schools, 13-vocational high schools, 12-ordinary high schools, 13-technical secondary schools, 13-technical schools, 14-specialized higher education for adults, 15-specialized formal higher education, 16 undergraduate higher education for adults, 17 undergraduate formal higher education, 20-graduate students and above. As for the political identity, 1-members of the Communist Party of China, 0-non-party members. As for household registration types, 0-rural household registration, and 1-urban household registration.

The measurement methods of all variables involved in this paper can be seen in the table 1.

(C) Descriptive Statistics

Descriptive statistics of all variables designed in this study are shown in the following table. It can be seen that the number of males and females in this selected sample is basically equal. The objects of the survey are mainly middle-aged people, among which the youngest individual is 18 years old and the oldest is 86 years old. The average education is in junior high school.

Table 2. Descriptive Statistics of Variables

Variable	Average	Standard Deviation	Maximum Value	Minimum Value	Quantity
Happiness	3.8560	0.8486	5	1	11307
Social justice	3.1021	1.0652	5	1	11307
Frequency of Internet Use	8.60 e-07	1	2.7435	-1.9812	2165
Internet Usage Ability	-9.21 e-07	1	1.0623	-2.7886	2135
Gender	.4754	.4994	1	0	11307
Age	51.1619	16.7697	103	18	11307
Education	9.5962	4.2964	20	3	11307
Income	4.1844	23.8917	999.9996	0	11305
Political Identity	.1136	.3174	1	0	11307
Household Registration type	.4676	.4990	1	0	11307
Ethnic Group	.9545	.2085	0	1	11307
Health Conditions	3.4661	1.0967	1	5	11307

4. Data Analysis and Conclusion

In order to verify the research hypothesis, this paper establishes the following six regression models, the results of regression analysis shown in the following table.

From the perspective of Internet use frequency and citizens' happiness, Internet use frequency has an impact on citizens' happiness in all samples. Besides, there is a positive relationship between Internet use frequency and citizens' happiness, but this relationship is not significant, that is, for every unit of Internet use frequency increase, citizens' happiness increases by 0.0086 units.

Table 3. Regression Results of Full Sample

Variable	Model 1 Happiness	Model 2 Social Justice	Model 3 Social Trust	Model 4 Happiness	Model 5 Social Justice	Model 6 Social Trust
Frequency of Internet Use	0.0086 (0.48)	0.0308 (1.25)	-0.0308* (-1.74)	0.0108 (0.59)	0.0283 (1.14)	-0.0307 (1.25)
Internet Usage Frequency * Ability				0.00013 (0.01)	0.0039 (0.19)	-0.0047*** (-0.32)
Gender	-0.0884*** (-2.66)	0.0080 (0.18)	-0.0070 (-0.22)	- 0.0832*** (-2.49)	0.0073 (0.16)	-0.0018 (-0.06)
Age	0.0068*** (4.66)	0.0009 (0.47)	-0.0030*** (-2.11)	0.0067*** (4.51)	0.0004 (0.21)	-0.0027** (-1.88)
Education	0.0129** (2.26)	0.0066 (0.85)	-0.0169*** (-3.02)	0.0120*** (2.08)	0.0068 (0.87)	-0.0162*** (-2.88)
Income	0.0008 (1.46)	0.0010 (1.37)	-0.0004 (-0.86)	0.0007 (1.42)	0.0010 (1.37)	-0.0004 (-0.86)
Political Identity	0.1959*** (3.69)	0.2202*** (3.04)	-0.0257 (-0.49)	0.2032*** (3.79)	0.2342*** (3.21)	-0.0353 (-0.67)
Household Registration Type	-0.0407 (-1.02)	-0.0361 (-0.66)	0.0026 (0.06)	-0.0309 (-0.77)	-0.0309 (-0.60)	-0.0037 (-0.09)
Ethnic Group	-0.0144 (-0.17)	-0.0761 (-0.68)	-0.0738 -0.91	0.0075 (0.09)	-0.0507 (-0.45)	-0.0669 (-0.81)
Health Conditions	0.2043*** (11.46)	0.0765*** (3.15)	-0.0747*** (-4.27)	0.2043*** (11.35)	0.0750*** (3.06)	-0.0747*** (-4.23)
Constant Term	2.7527*** (19.32)	2.6594*** (13.70)	3.1778*** (22.73)	2.7358*** (18.96)	2.6546*** (13.53)	3.1546*** (22.27)
R ²	0.0824	0.0158	0.0158	0.0827	0.0162	0.0226
N	2165	2165	2165	2135	2135	2135

Note: * $P < 0.1$, ** $P < 0.05$, *** $P < 0.01$, and T values are in brackets.

From the perspective of Internet use frequency and citizens' social trust, Internet use frequency impacts citizens' happiness in all samples. Meanwhile, a significant negative relationship exists between Internet use frequency and citizens' social trust, that is, for every unit of Internet use frequency increase, citizens' social trust decreases by 0.0308 units. In addition, in different ages and different education groups, the social trust of citizens also has a significant impact on the frequency of Internet use, so hypothesis H3 is recognizable.

According to the regression results of the moderating relationship between Internet use ability and happiness, the regression coefficient of the interaction item between Internet use ability and Internet use frequency is 0.00013. Therefore, it can be considered that Internet use ability plays a crucial role in regulating the relationship between Internet use frequency and happiness. In other words, with the same other conditions, the happiness of people with strong Internet use ability is 0.00013 units higher than that of people with weak Internet use ability, that is, the social trust of people with strong Internet use ability to citizens is 0.00013 units higher than that of people with weak Internet use ability with the same other conditions. Therefore, H4 is true.

According to the regression results of the moderating relationship between Internet use frequency and social justice, the regression coefficient of interaction between Internet use ability and Internet use frequency is 0.0039. Therefore, we can suggest that Internet use ability is key to regulating the relationship between Internet use frequency and social justice. That is to say, with the same other conditions, people with stronger Internet use ability have a higher sense of social justice than people with weak Internet use ability, that is, people with strong Internet use ability have a higher social trust in citizens than people with weak Internet use ability by 0.0039 units with the same other conditions. Therefore, H5 is tenable.

According to the regression results of the adjustment relationship between Internet use frequency and social trust, the regression coefficient of interaction between Internet use ability and Internet use frequency is -0.0047. Therefore, we can see that Internet use ability is vital in regulating the relationship between Internet use frequency and social trust. That is to say, if other conditions are equal, people with strong Internet use ability have a higher sense of social justice than people with weak Internet use ability by -0.0047 units. By the same token, with other conditions being equal, people with strong Internet use ability have a higher sense of social trust in citizens than people with weak Internet use ability by -0.0047 units. Therefore, H6 holds true.

This paper analyzes in detail the influence of Internet use frequency and Internet use ability on citizens' happiness, social trust, and social justice, which is instructive to understand how Internet use shapes citizens' social attitudes.

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