Psychology Research and Behavior Management

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ORIGINAL RESEARCH

How Social Media Influences Public Attitudes to COVID-19 Governance Policy: An Analysis Based on Cognitive-Affective Model

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Introduction: Based on the cognitive-affective model, this paper examines how social media affects the public cognitive and affective factors, further influence their attitudes towards COVID-19 governance policy.

Methods: Through an online survey, we measured individual COVID-19 policy attitude, social media use and other related factors of 1222 respondents from 12 countries, and based on this, we carried out regression and mediation analysis on the data to obtain the research results.

Results: From the perspective of cognitive factors, the public perception of the severity of the COVID-19 itself does not significantly affect their attitudes towards governance policy. On the contrary, the evaluation on government governance performance, risks and governance anticipations have more significant impacts. Among the affective factors, personal anxiety and patriotism significantly affect the formation of public attitudes, personal anxiety is positively correlated, and patriotism is negatively correlated. It is important to note that nationalism has no significant influence on public attitudes to COVID-19 policy on a global scale.

Conclusion: (1) Social media influences the public COVID-19 policy attitudes through their moderating effect on affective and cognitive factors. (2) The impact of social media on affective pathways is more significant than that on cognitive pathways. (3) The positive moderating effect of social media on patriotism obscures the tendency of strict governance of COVID-19 caused by aggravating people's anxiety.

Keywords: Covid-19, public attitude, social media, cognition, affection, patriotism

Introduction

The COVID-19 pandemic and its variants are still spreading around the world. Different governments have given different prevention and control strategies based on the political tradition of each country. However, at the individual level, how do the public view various pandemic prevention policies? What cognitive and affective factors influence their attitudes towards various COVID-19 governance policy? How do social media affect the attitude formation process? This study attempts to answer this question based on a sample of 1222 members of the public in 12 countries around the world.

We employ cognitive-affective model to answer this question.[1] This model mainly emphasizes the adaptive behavior and decision-making process of individual personality system in different social situations, in which cognition and affection are considered to be the two most basic elements. Cognition mainly refers to the part of information processing, while affection mainly refers to psychological reactions such as emotions and feelings.[1] In COVID-19 governance research, many researchers also apply cognitive-affective models to the analysis of individual-related attitudes and decision-making. Such as, Szczuka et al[2] compared the cognitive-affective behavioral processing mechanisms of the general public to expert and media information. Tunca et al[3] analyzed Turkish people's attitudes towards quarantine

Received: 20 April 2022
Accepted: 27 July 2022
Published: 10 August 2022

Policy directly based on a cognitive-affective framework. Compared with the overall use of cognitive-affective models to conduct framework research, cognitive-affective analysis of attitudes toward COVID-19 governance is more scattered in the reveal of some specific factors.[4,5] So what cognitive and affective factors might have an impact?

In terms of cognition, we mainly consider the following three factors: hazard perception, government effectiveness evaluation and risk and governance anticipations. In the COVID-19 pandemic, researchers found that perceived risk significantly affects people's attitudes towards vaccination,[6] home isolation measures,[5] and people's travel intentions.[7] Huang et al also pointed out from the protection motivation theory that risk perception also affects people's willingness to vaccinate.[8] Therefore hazard perception should be considered first. Secondly, a country's governance capacity will also affect people's attitude. For example, Coccia[9] directly ranked countries' emergency response capacity, protection capacity, government effectiveness, and degree of regulation and control in the COVID-19 pandemic. Haug et al[10] also ranked countries for their governance effectiveness from multiple perspectives, including case confirmation, trace tracing, treatment and public health system response capabilities, social distancing, and travel restrictions. At the same time, some researchers such as Noland and Zhang[11] confirm that Trump's electoral loss has an important relationship with his inappropriate COVID-19 governance policy. Meanwhile, Rehm[12] reveals that risk inequality affects people's policy preferences, while Mahmud's study more specifically points out that risk anticipation directly affect public vaccination rates.[6] Therefore risk and governance anticipations become the third cognitive factor we consider.

In terms of affection, we mainly consider the following three factors: personal anxiety, patriotism, and nationalism. In the COVID-19 pandemic, people's anxiety has become an important factor affecting behavioral protection and policy attitudes. Renström and Bäck[13] shows through a controlled experiment that different affective characteristics of the public affect different dimensions of their policy support. Fear, anxiety, and anger are all discriminative variables. In addition to the general anxiety about the development of the COVID-19, patriotism has also become an important influencing variable. Rupar et al[14] took the Polish public as an object, and distinguished the relationship between three types of patriotism and their national policy support, and pointed out that constructive patriotism was positively related to internal pandemic prevention policies and social distancing support, while conventional patriotism is positively correlated with border restriction policies. Sibley et al[5] also used the case of New Zealand to reveal that the higher the level of patriotism, the more supportive the pandemic prevention policy. In general, the correlation mechanism between patriotism and pandemic prevention policies lies in the theory of social identity, and this identity may have a tendency to become polarized with the practice and results of governance policy in different countries. Unlike patriotism, which emphasizes in-group identification,[15] nationalism which emphasizes out-group exclusion, may have a similar effect. Su[16] uses data from the United States to demonstrate that public support for policies depends on whether nationalist policies are consistent with their ideological orientation.

Social media was the third dimension of influence we considered. In this pandemic, the role of social media in transmitting information has played a direct role in the formation of people's attitudes towards the pandemic.[17] It will also affect people's judgment on the government's pandemic governance,[18] and ultimately affect people's expectations for future risks and risk governance capabilities,[19] while Cauberghe et al,[20] Wheaton et al,[21] Wiederhold,[22] and others' studies have verified that social media can affect people's attitude towards pandemic management by affecting people's anxiety. Lu et al,[23] Earnshaw et al,[24] Allington et al,[25] Iwai et al[26] also demonstrated that social media influences people's patriotism and nationalism affects people's attitudes.

Supported by the above researches, we re-fit the relevant factors that may affect the public COVID-19 policy attitudes, and form the following initial model in Figure 1.

Objectives and Hypotheses

Our research objective was to examine how public attitudes towards COVID-19 governance are influenced by Individual cognitive and affective factors, and how social media plays a role in it. We will answer this question mainly by testing the following hypotheses.

H1. Individuals' perception of the severity of the pandemic will affect their attitudes towards governance policy.

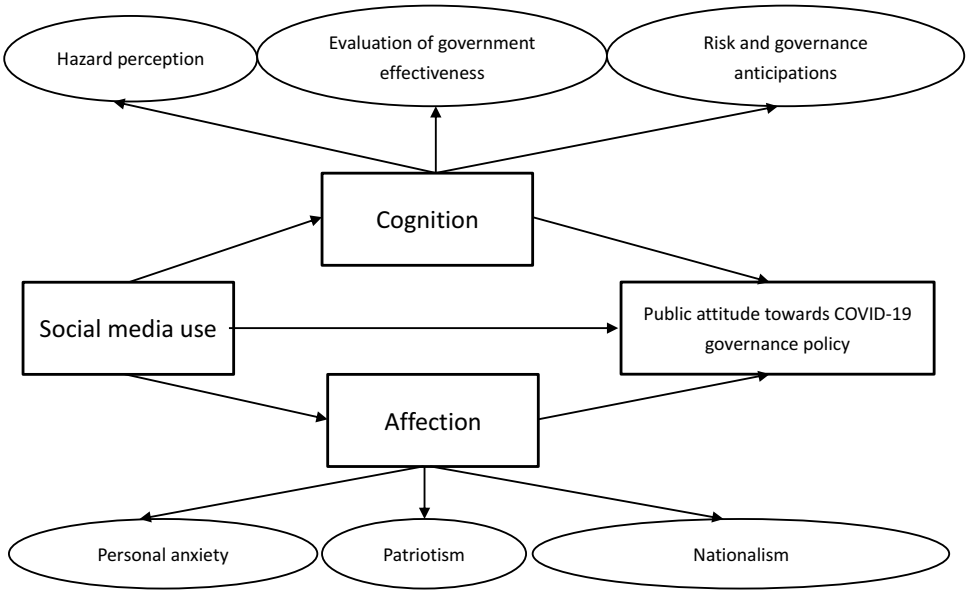

Figure 1 The initial "Social Media + "Cognitive-Affective"" model of public attitudes towards Covid-19 policy.

H2. Individuals' evaluation of government effectiveness will affect their attitudes towards governance policy.

H3. Individuals' risk and governance anticipations will influence their attitudes towards governance policy.

H4. Personal anxiety on COVID-19 pandemic will influence their attitudes towards governance policy.

H5 Patriotism will influence individual attitudes towards governance policy.

H6. Nationalism will influence individual attitudes towards governance policy.

H7. Social media use will influence individual attitude towards COVID-19 governance policy.

H8. Social media use will influence individual attitudes towards COVID-19 governance policy by influencing perceptions of the severity of the pandemic.

H9. Social media use will influence individual attitude towards COVID-19 governance policy by influencing perceptions of governance effectiveness.

H10. Social media use will influence individual attitude towards COVID-19 governance policy by influencing people's anticipation of risks and the ability of governments to handle.

H11. Social media use will influence individual attitude towards COVID-19 governance policy by influencing their level of anxiety about the pandemic.

H12. Social media use will influence individual attitude towards COVID-19 governance policy by influencing people's patriotism.

H13. Social media use will influence individual attitude towards COVID-19 governance policy by influencing nationalism.

On the basis of the above research assumptions, we further consider that there is a complex relationship among public cognition factors and affective factors. For example, social media may affect the evaluation of government effectiveness which may affect the public anticipations of future risks and governance capabilities,[27] and ultimately affect the public

attitude to govern COVID-19, while social media also may affect personal anxiety which may also aggravate patriotism[28] and then affect the public attitude to govern. We will also test these two correlation patterns as Hypotheses 14 and 15. All hypotheses are listed in Table 1

Materials and Methods

Participants

This research adopts the method of online survey, relying on the online survey platform of Prolifific Academic Ltd. (https://www.prolific.co/), from November 16 to November 29, 2021, 1222 valid samples data from 12 countries were collected. In order to ensure the representativeness of the data, we adopted the method of sample quota sampling in different countries, and collected 100 in each country. However, due to factors such as the difficulty of sample recovery in each country, the characteristics of the final recovered sample data are shown in Table 2. During the data collection process, we monitor the population sex ratio and the number of responses, and design logical questions to screen to ensure the reliability and representativeness of the collected data. The gender ratio of the final questionnaires returned was 47.9:52.1, with 70.4% of people under the age of 35, 56.7% of those with a subjective income at the middle and below, and 66.1% of those with a college degree or above.

Measurement

Public Attitude Towards COVID-19 Governance Policy

Combining the research of Rupar et al[14] and related measures of COVID-19 governance and control around the world, individual attitudes towards COVID-19 governance policy in this study are mainly measured by measuring the public

Table 1 A Summary of Hypotheses

	Aim	Hypothesis	
1	Tests on the relationship between cognitive factors and public attitude towards COVID-19 governance policy	H1	HP → PATCOVID-19P
		H2	GEV →PATCOVID-19P
		H3	RGA→PATCOVID-19P
2	Tests on the relationship between affective factors and public attitude towards COVID-19 governance policy	H4	PA→PAT COVID-19P
		H5	Patriotism → PATCOVID-19P
		H6	Nationalism → PATCOVID-19P
3	Test on the relationship between social media and public attitude towards COVID-19 governance policy	H7	SMU→PATCOVID-19P
4	Tests on the moderating effects of social media on the relationship between cognitive factors, affective factors and public attitude towards COVID-19 governance policy	H8	SMU×HP → PATCOVID-19P
		H9	SMU×GEV → PATCOVID-19P
		H10	SMU×RGA → PATCOVID-19P
		H11	SMU×PA → PATCOVID-19P
		H12	SMU×Patriotism→ PATCOVID-19P
		H13	SMU×Nationalism → PATCOVID-19P
		H14	SMU×GEV× RGA→ PATCOVID-19P
		H15	SMU×PA×Patriotism → PATCOVID-19P

Abbreviations: PATCOVID-19P, Public Attitude towards COVID-19 Governance Policy; HP, Hazard Perception; GEV, Government Effectiveness Evaluation; RGA, Risk and Governance Anticipations; PA, Personal Anxiety; SMU, Social Media Use.

Table 2 Distribution of the Sample's Socio-Demographic Information (N=1222)

	Categories	Frequency	Percentage (%)
Gender	Male	585	47.9
	Female	637	52.1
Age	18–24	396	32.4
	25–34	464	38.0
	35–44	196	16.0
	45–54	100	8.2
	55 -	66	5.4
Education	High school	304	24.9
	Vocational school	111	9.1
	College/University	486	39.8
	Master and above	321	26.3
Subjective income class	Upper	23	1.9
	Upper middle	204	16.7
	Middle	466	38.1
	Lower middle	349	28.6
	Lower	180	14.7
Nationality	Brazil	99	8.1
	India	98	8.0
	US	148	12.1
	UK	137	11.2
	South Africa	108	8.8
	Germany	101	8.3
	France	134	11.0
	China	100	8.2
	Australia	98	8.0
	Russia	67	5.5
	South Korea	89	7.3
	Japan	43	3.5

attitude towards information technology data tracking and border isolation. The specific questions are: when you think the pandemic is serious, (1) it is necessary to carry out an international travel ban; (2) it is necessary to carry out border management. (3) Health tracking is necessary. (4) It is necessary to carry out identity verification. (5) It is necessary to show the vaccination certificate. The options use a 5-point scale ranging from "completely agree" to "completely disagree", assign values in reverse order and add and average the five items to obtain the research measurement indicator "individual attitude towards the COVID-19 governance policy". The Cronbach's alpha of this indicator is 0.807, the mean is 2.01, and the standard deviation is 0.84. The KMO value is 0.728 (df=10.p=0.00).

Social Media Use

The measurement of social media use in this study revolves around the use of information exposure, comment, and forwarding related to the national governance policy of the "COVID-19". Specifically, it includes: (1) I pay attention to various sources information on social media about my nation's policies against COVID-19; (2) I leave "likes" on social media posts about my nation's policies against COVID-19; (3) I leave comments on social media posts about my nation's policies against COVID-19; (4) I create social media posts or forward other content/posts which are about my nation's policies against COVID-19: (5) I follow other social media accounts which post about my nation's policies against COVID-19; (6) I follow social media accounts of scientists and politicians who make statements on the COVID-19 pandemic. (7) Follow the accounts of authoritative scientists or politicians who have more discussions on their own country's anti-pandemic policies or measures; (8) I discuss with others on social media and/or in-person during private gatherings about COVID-19; (9) My friends often make comments and/or posts regarding the COVID-19 pandemic on social media. The options are measured from "completely disagree" to "completely agree" with a 5-scale scale, and

finally, after performing sequential assignment and averaging, the global public social media usage indicators for their own country's COVID-19 governance policy are obtained. The Cronbach's alpha of this indicator is 0.843, the mean is 2.82, and the standard deviation is 0.83. The KMO value is 0.871 (df=36.p=0.00).

Perception of the Severity of the Pandemic

We measured it through two indicators, and asked the subjects to answer the degree of harm of the COVID-19 to their country recently and from April to August last year (the period when the pandemic was concentrated in most countries in the world). The options are from 1–5 on a 5 scale, with 5 being the most severe. As a result, the mean values of the two indicators were 3.24 and 4.22, respectively, and the standard deviations were 1.09 and 0.92, respectively.

Perception of Pandemic Hazards

We obtained by asking subjects to answer the following questions: How do you think the COVID-19 pandemic in your country is harmful to the following aspects? (1) It is very harmful to your country; (2) It is very harmful to your family; (3) It is very harmful to your work and daily life. (4) It is very harmful to your personal health. The options are a 5 scale from 1–5, with 5 being the best fit. The hazard perception of the pandemic is obtained after performing sequential assignments, summing and averaging, the average value of this indicator is 3.09, the standard deviation is 0.78, and the Cronbach's alpha is slightly 0.701. The KMO value is 0.704 (df=6.p=0.00).

Evaluation of Government Effectiveness

We measure it through the question "How do you think your country's COVID-19 governance policy", and the answers include (1) very suitable; (2) somewhat suitable; (3) not suitable before, but is now better; (4) It was suitable before, but is worse now; (5) It is not suitable The mean and standard deviation of the measurement index obtained by the reverse order assignment were 2.93 and 1.30, respectively.

Risk and Governance Anticipations

We measure it by the following questions: Do you think the pandemic will strike again? Are you worried that national policies can protect everyone? Options include (1) Yes and very worried; (2) Yes but not worried; (3) No and not worried. The mean and standard deviation of the indicator obtained after assigning them in order are 1.43 and 0.69, respectively.

Personal Anxiety

Considering that people's anxiety levels will change in different periods of the pandemic, we also use two indicators to measure, and ask participants to answer whether they are feeling "due to the COVID-19" and last year (the peak of the global pandemic from April to August). "To trouble", the answer is a five-point scale of 1–5, the higher the more serious, the mean of the two indicators are 2.86 and 3.79, respectively, and the standard deviation is 1.18 and 1.19.

Patriotism

We used the measure from the Hanson and Dwyer's study,[29] and after selecting items according to the purpose of the study, we measured it by the following questions: Do you feel that a true citizen (1) is independent and self- reliant; (2) question public policy decision-making; (3) opposes some government policies because they care of their country and wants to improve the country; (4) criticizes their own country out of love for their country; (5) believes that simply accepting the actions of their country when he/she disagrees with them is not good for the country; (6) of one's country speaks out when they believe their own country's actions are wrong. The answers range from completely disagree to completely agree on a 5-scale scale. Finally, the index is obtained by adding and averaging the assignments. The Cronbach's alpha is 0.761, and the mean and standard deviation are 3.71 and 0.66, respectively. The KMO value is 0.830 (df=15.p=0.00).

Nationalism

It is also measured in the study of Hanson and Dwyer[29] mainly through the following 8 items. Do you think a true citizen: (1) would support an important government policy if a rival country opposed it; (2) would support their own country regardless of the circumstances; (3) would support government policies for the very reason that they are the

policies of their own country (4) accepts all the decision made on our behalf by the government; (5) supports their own country's leaders even if they disagree with their actions; (6) believes that people who do not wholeheartedly support their own country should live elsewhere; (7) believes that when their own country is under heavy criticism from other countries that they should support their own country by not adding more criticism; (8) feels that generally, one's own country is better than any other country. The same answer ranges from completely disagree to completely agree with the 5-scale measurement, and the Cronbach's alpha of this indicator obtained after the final assignment and the total average is 0.894. The mean and standard deviation were 2.28 and 0.84, respectively. The KMO value is 0.911 (df=28.p=0.00).

Other Demographic Variables

In addition to the above-mentioned main study measurement variables, this study also considers the impact of demographic variables such as gender, age, education, income, cultural values (authoritarian) tendencies, and the possible impact of COVID-19 on people's physical and mental levels. We believe these factors may influence the public individual attitudes towards COVID-19 governance policy. The operational status of each variable is as follows: Gender: 1=male, 2=female. Age, education, and income are ordinal variables, and the relevant distributions are shown in Table 2. The respective mean and standard deviation are: age (M=3.17; SD=1.15), education (M=2.67; SD=1.11), income (M=3.37; SD=0.98); cultural values are measured using Henry's[30] measure of authoritarianism in the study of 2009, which had respondents ranked among five pairs of concepts: "independence or respect for elders", "self-reliance or obedience", "curiosity or good manners", "being well-behaved or being considerate", and "creative or disciplined." Pick one of each, and finally we add up and average to get an indicator of authoritarian leaning values. The mean and standard deviation of this indicator are 0.31 and 0.28, respectively. "Have you ever had the COVID-19" was transformed into a dummy variable, and the mean and standard deviation were 0.10 and 0.31, respectively. Depression attitude was measured by four different levels of statements, 0 being "no mental distress since last year" and 3 being "severe mental illness distressed since last year and seeking medical attention or taking medication". The mean and standard deviation of this indicator are 2.11 and 0.92, respectively.

Statistical Analysis

We test the hypotheses presented in this paper in two steps. First of all, through regression analysis, we will examine which factors are affecting the public COVID-19 policy governance attitude among the many influencing variables, and clarify whether the relevant cognitive and affective variables proposed in this paper have a significant impact? Does social media use have a significant impact? The second step is to conduct chain mediation analysis based on model 82 in the process plug-in, establish a model diagram that social media ultimately acts on the variables of COVID-19 policy governance through cognitive and affective factors, and conduct global public attitudes towards COVID-19 governance policy.

Results

Key Factors Influencing Global Public Attitudes Towards COVID-19 Governance Policy: Cognition, Affection and Social Media

When demographic variables, cognitive variables, affective variables, and social media use are put into a regression equation with individual attitudes toward COVID-19 governance policy as dependent variables (see Table 3), it can be found that gender, age, income, education, values (authoritarian tendencies), and whether they are infected can be found Neither COVID-19 nor mental health conditions did not affect public attitudes toward COVID-19 governance policy. Pandemic severity and perception of pandemic hazards in cognitive variables also did not affect their attitudes towards COVID-19 governance policy, evaluation of government effectiveness (B=0.062, $p<0.01$), and anticipations for future risks and governance capabilities (B =−.081, $p<0.01$) significantly affected the public attitude towards the COVID-19 governance policy, and was negatively correlated. It means, from a global scale, the more dissatisfied with the effectiveness of government governance and the less optimistic about future governance, the more the public is inclined to strict governance measures. Among the affective variables, personal anxiety (B=0.184, $p<0.01$; B =0.056, $p<0.01$;) and patriotism (B=−.093, $p<0.01$) significantly affect the Individual response to the COVID-19 Policy, while nationalism

Table 3 Results of Regression Analysis of Individual Attitude Towards COVID-19 Policy (N=1202)

	Unstandardized Coefficient		Standardized Coefficient	t	p	VIF
	B	SE	Beta			
Constant	3.013**	0.256	–	11.757	0.000	–
Male	−0.014	0.048	−0.009	−0.304	0.761	1.114
Age	0.030	0.020	0.041	1.470	0.142	1.083
Education	0.012	0.021	0.016	0.588	0.557	1.092
Income	−0.026	0.024	−0.030	−1.080	0.281	1.074
Authoritarianism	−0.049	0.090	−0.016	−0.543	0.587	1.296
Ill_COVID-19	−0.048	0.075	−0.017	−0.637	0.524	1.044
Mental Depression	0.007	0.026	0.008	0.281	0.778	1.141
COVID-19 Severely_Last Year	0.015	0.029	0.017	0.534	0.593	1.405
COVID-19 Severely_Recently	−0.012	0.025	−0.015	−0.470	0.638	1.443
COVID-19 Hanzard Perception	0.038	0.037	0.036	1.046	0.296	1.631
Government Effectiveness Evaluation	0.062**	0.017	0.095	3.526	0.000	1.028
Risk and Governance Anticipations	−0.081*	0.034	−0.067	−2.386	0.017	1.118
Personal Anxiety_Last Year	0.184**	0.025	0.258	7.241	0.000	1.798
Personal Anxiety_Recently	0.056*	0.026	0.079	2.141	0.032	1.915
Patriotism	−0.093**	0.035	−0.073	−2.634	0.009	1.089
Nationalism	0.024	0.030	0.024	0.780	0.436	1.308
Social Media Use	0.078**	0.030	0.077	2.595	0.010	1.238
R^2	0.161					
Adjusted R^2	0.149					
F	F (17, 1184)=13.366, p=0.000					

Notes: D-W Value: 1.969; *p<0.05 **p<0.01.

has no significant impact on individual's attitudes towards COVID-19 governance policy. Social media use (B=0.078, p<0.01) significantly affected individual attitudes toward COVID-19 governance policy. Among them, personal anxiety and social media were positively correlated with personal attitudes towards COVID-19 governance policy, while patriotism was negatively correlated. It indicates, on a global scale, the demographic factors of individuals themselves, as well as the severity of the pandemic itself and perceptions of harm are not the main factors that affect Individual attitudes towards COVID-19 governance policy. Important influencing variables are the public evaluation of the government effectiveness of various governments, the future risk and governance anticipations of the COVID-19, the personal anxiety caused by the COVID-19, and the degree of patriotism. Among them, the impact of social media use is also very significant. The results of the study verified that the influence of H1-H5 as well as H7, H6 was not verified. So from the perspective of social media, what is the relationship between it and other influencing factors, and how does each influencing factor affect the public individual attitudes towards the COVID-19 governance policy?

Chain Mediation Analysis of Social Media on Cognitive and Affective Factors

So what is the ultimate mechanism of social media influence on individual attitudes towards COVID-19 governance policy? We performed a chain mediation test using the process plug-in model 82. The results show: R= 0.3069, R-sq= −0.0942, F= 25.2291, df1 =5.00, df2 =1213.00, MSE = 0.6568, P = 0.0000, indicating that the benchmark model is well fitted, and the model and results can be adoption. Further interpretation of the results shows that the direct effect of social media use on individual attitudes towards the COVID-19 governance policy is 0.1209, se=0.0295, t=4.0980, p=0.0000, and the effect result does not include 0 (LLCI=0.0639, ULCI=0.1787). At the same time, the overall indirect effect was also significant, with an effect size of 0.0401. Analysis of each influence chain found: (1) Patriotism weakened the influence of social media on the attitude of strict governance of the COVID-19, and a masking effect occurred, with an effect value of −0.142 (LLCI=−0.0272, ULCI=−0.0020), and H12 was verified. (2) The use of social media aggravates

personal anxiety and ultimately affects the public attitude towards the COVID-19 governance policy, and there is a partial mediation effect, with an effect value of 0.0514 (LLCI=0.0328, ULCI=0.0727). H11 has been verified (3) The effect of social media use on weakening the evaluation of government effectiveness and thus affecting the tendency of strict governance of the COVID-19 is not significant (LLCI=−0.100, ULCI=0.0024). H9 has not been proven (4) The use of social media aggravated the public negative expectations on the future risks and governance of the COVID-19, and finally affected the occurrence of the public strict individual attitudes towards the COVID-19 governance policy. Partial mediation effect was significant, with an effect value of 0.0084 (LLCI=0.0017, ULCI=0.0183). H10 is certified. (5) Patriotism weakened the influence of social media on personal anxiety and then advocated strict governance of the COVID-19, with an overall effect value of −0.0022 (LLCI=−0.018, ULCI=−0.0002). H15 has been verified (6) The negative moderating effect of social media use in aggravating the public negative expectations for the future risks and governance of the COVID-19 and then advocating strict individual attitudes towards the COVID-19 governance policy is not significant (LLCI=−0.0007, ULCI =0.0001). It indicates, although a positive evaluation of the effectiveness of government governance will weaken the public tendency to strictly manage the COVID-19, this effect is not significant whether it is a direct mediator or an indirect chain mediation test. H14 is not certified. As perceptions of COVID-19 severity were not significantly correlated with public attitudes toward governance policy, H8 and H13 were not corroborated accordingly. The above research results are shown in Table 4. At the same time, we draw this association mechanism into Figure 2 hoping to more clearly demonstrate the cognitive-affective impact mechanism of social media on governance attitudes.

Limitation

In terms of sample selection, this study is based on the responses of 1222 members of the public in 12 countries around the world, but the cultural and social governance policy of different countries are not included as background factors, which means that the results of this study are only suitable for a rough global scale. It is estimated that it is not suitable to be fully applied to specific countries. Among the influencing factors of cognition and affection, this study only selected some influencing factors based on the existing literature review, and the selection of variables can be expanded. In the analysis method, this study adopts the chain-mediated method of process instead of the more mature structural equation method, and adopts the strategy of layer-by-layer analysis, which may affect the overall quality of the research while showing the details of the inference.

Conclusion

This study examines the factors and mechanisms that influence global public attitudes toward COVID-19 governance policy from the perspective of social media use at the individual level of analysis. Through the "cognition-affective" + "social media" model, it is found that among the perspective of cognitive factors, the public perception of the severity of the COVID-19 itself does not constitute a decisive factor for their strict governance tendency. Governance

Table 4 Summary of Process Model 82 Mediation Test Results

Items	Indirect Effect	BootSE	BootLLCI	BootULCI	Direct Effect	Test Results
Total Indirect Effect	0.0401**	0.0127	0.0168	0.0664		
SMU≤ Patriotism ≤ PATCOVID-19P	−0.142**	0.0064	−0.0272	−0.0021	0.1209**	Masking effect
SMU≤ PA_Recently ≤ PATCOVID-19P	0.0514**	0.0103	0.0328	0.0727	0.1209**	Partial mediation effect
SMU≤ GEV ≤ PATCOVID-19P	−0.0031	0.0031	−0.100	0.0024	0.1209**	Mediating effect is not significant
SMU≤ RGA ≤ PATCOVID-19P	0.0084**	0.0044	0.0017	0.0183	0.1209**	Partial mediation effect
SMU≤ Patriotism ≤ PA_Recently ≤ PATCOVID-19P	−0.0022**	0.0012	−0.0048	−0.0022		Masking effect and partial mediation effect

Note: **p<0.01.

Abbreviations: PATCOVID-19P, Public Attitude towards COVID-19 Governance Policy; HP, Hazard Perception; GEV, Government Effectiveness Evaluation; RGA, Risk and Governance Anticipations; PA, Personal Anxiety; SMU, Social Media Use.

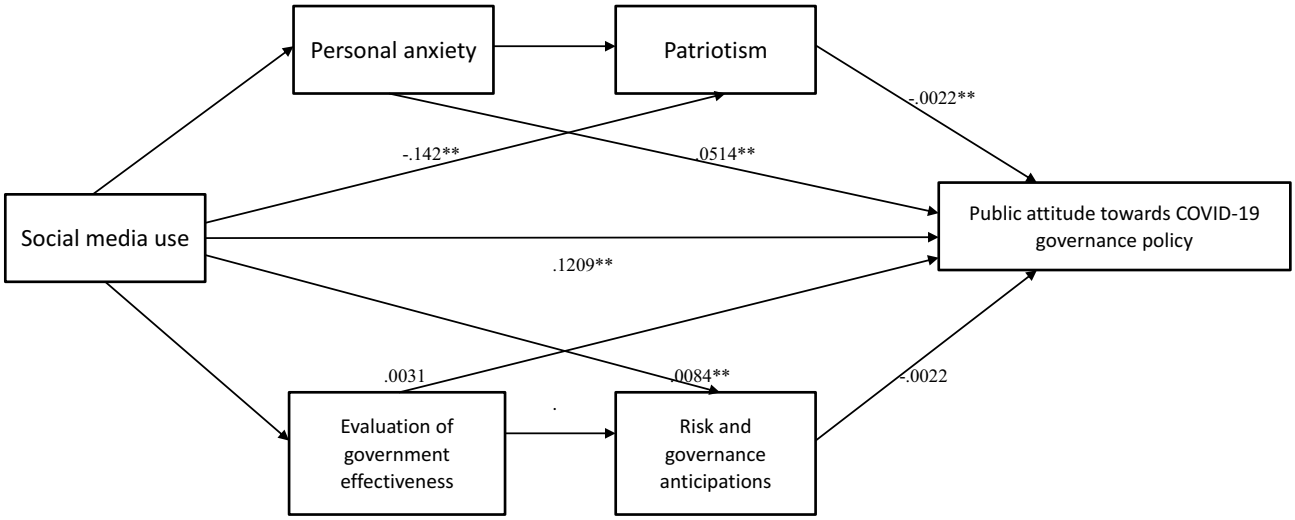

Figure 2 "Social Media + "Cognitive-Affective"" effect relationship on public attitudes towards COVID-19 policy (**p<0.01).

performance, risk and governance anticipations are more important factors. Among the affective factors, personal anxiety and patriotism significantly affect the formation of public governance attitudes, personal anxiety is positively correlated, and patriotism is negatively correlated. It should be noted that the tendency of nationalism has no significant influence on the attitude of COVID-19 pandemic governance at the global scale. At the same time, social media has a significant impact on the public attitude of COVID-19 policy. In addition to its independent role, it mainly plays a role in affecting the public affective factors (patriotism, personal anxiety), and moderates the function of the risk and governance anticipations among cognitive factors, while the effect on other cognitive factors was not significant. The results of the study also verified once again the important role of social media in moderating "affective power" in the generation of individual attitudes towards COVID-19 governance policy. The specific analysis is as follows.

Among the cognitive factors that affect public attitude of COVID-19 policy, the public perception of the risks and hazards of the COVID-19 itself is not as important as their confidence on government governance efficiency for future risk.

Our research verifies that the perception of the harm of the COVID-19 does not significantly affect the public attitude towards pandemic prevention and control measures. On the contrary, the government's governance ability is the fundamental factor in their decision to adopt strict pandemic prevention measures. This can be seen from the fact that we found in the regression equation that the public perception of the severity of the COVID-19 pandemic during the worst period of 2020 pandemic and the recent pandemic perception, including the public hazard perception had no significant impact on their attitude on COVID-19 governance policy. What have a significant impact are the effectiveness of government governance and the public prediction of future risks and governance capabilities. It reveals once again that trust in the government and its management capabilities are the keys to determining the public attitude to govern the pandemic. This is an affirmation of the effectiveness of contemporary government management.[31,32] At the same time, we can also find that the more the public evaluates the effectiveness of government governance, the more inclined they are to strict governance measures, and the more optimistic the public is about future risks and governance expectations, the more they are not inclined to strict management measures. This phenomenon may be rooted in the pandemic management practices of different countries, and the exploration of this issue requires country-specific research. All in all, in the framework of planning-rational behavior theory, the decisive factor influencing public attitude on COVID-19 is no longer the pandemic itself, but the ability to govern the pandemic.

Among the affective factors that affect public attitude on COVID-19 governance policy, personal anxiety and patriotism are the main influencing factors, and nationalism has no significant influence on the global scale.

Among the affective factors that affect the global public attitude to the COVID-19 policy, personal anxiety is the most significant influencing variable, especially in the period from March to May in 2020, when the pandemic was the most serious, the public anxiety about the pandemic showed a difference between their advocating strict governance and control measures. The most significant relationship is also the most influential factor among all influencing factors. At the same time, it can be seen in the path analysis diagram that personal anxiety also comprehensively affects people's patriotism, the evaluation of the country's governance effectiveness, and the expectations of future risks and governance. That is to say, personal anxiety is the most significant factor affecting the public attitude to the COVID-19 policy, and it also plays a role through its influence on other affective and cognitive factors. The effect of affection on governance policy has been confirmed once again.[33] Our research also found that, relative to patriotism, the effect of nationalism on the propensity to govern COVID-19 was not significant. It means the response chain based on terror management theory that stimulates nationalistic sentiments due to public fear of risk and then advocates strict management measures does not exist on a global scale. On the contrary, the rise of patriotism based on social identity theory during the pandemic has actually played a negative moderate function in the strict governance preference of the pandemic on a global scale. Patriotism based on the theory of social identity has actually played a negative moderating role in supporting the strict management of the pandemic on a global scale.

The use of social media has a significant effect on public attitude of COVID-19 governance policy, which mainly plays a role through partial mediation or masking effect on affective factors.

The influence of social media on the global public attitude on COVID-19 governance policy mainly plays its role through the affective chain, and has relatively little impact on the cognitive chain. The influence of social media on the affective chain is mainly achieved by stimulating people's personal anxiety. At the same time, the patriotism promoted by social media has a negative moderating effect on people's COVID-19 policy attitudes. Ultimately, this negative moderating effect obscures the social media's positive effect. Relatively speaking, the use of social media has little impact on the evaluation of government effectiveness and will not affect the public attitude to the COVID-19 policy, but it has a significant impact on the public future risk perception and governance effectiveness expectations, and ultimately increases the tendency to strict governance. These results demonstrate the importance of existing studies on the role of social media in COVID-19 governance.[14,20,23,26] But in general, the use of social media has no significant impact on the cognitive chain in the formation of the attitude on COVID-19 governance policy. In conclusion, the use of social media mainly plays a role through the affective factors in the formation of the attitude on COVID-19 governance policy, and has little impact on the cognitive factors. The revelation of this mechanism provides support for proposing the occurrence chain of "social media-affective-COVID-19 policy attitude" based on the "social media + cognitive-affective" model.

In connection with the current state of COVID-19 pandemic and the emerging research related to the management of the COVID-19 pandemic, the main contributions of this research are as follows:(1) Compared with a large number of studies focusing on the moderating role of social media in the single pathway of affection or cognition in epidemic prevention and control,[34–37] this study puts both cognitive and affective factors into one model, and compares the effects of social media in the two pathways. Although this mechanism needs to be refined in the social and political contexts of different countries, it provides a basic reference system from the level of individual psychology. (2) From the macroscopic level of the overall research on COVID-19 pandemic, it forms a complementary role with the current research on COVID-19 and social media,[38] the impact of COVID-19 cognition on future pro-environmental behaviors,[39] and the digital diagnosis of epidemic viruses.[40,41] Based on the perspective of psychology research and behavior management, this study provides a research practice for jointly promoting social governance in the post-COVID-19 era.

Ethics Statement

Hereby, the authors of this paper; Ruixia Han; Jian Xu, do consciously assure that this study has followed the guidelines and principles as set forth by the following ethical statement:

1. The body of work comprising this paper is entirely original and none of it has been previously published.

2. Informed consent was obtained from all participants in this study prior to their participation.
3. This study's research methodology, the data collected, and findings were all conducted without anything being falsified or purposefully altered.
4. This study was reviewed and verified an ethics committee under the governing institution of Shanghai Jiao Tong University.

Ethics Committee: The Academic Committee of the School of Media & Communications.
Ethics Committee Members: Benqian Li; Guoliang Zhang; Jinwen Xie; Yan Ge.

1. This study was conducted under the principles set forth by the most recent Declaration of Helsinki ethical standards and the World Medical Association to ensure the safety, well-being, and overall benefit of all study participants.
2. We the authors agree and abide with the above statements.

Author Contributions

Both authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

Funding

This study was funded by the National Social Science Fund of China (grant number: 21BXW053).

Disclosure

The authors report no conflicts of interest in relation to this work.

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