

ORIGINAL RESEARCH

The Relationship Between Corruption Perception and Depression: A Multiple Mediation Model

Yujie Zhang

School of International and Public Affairs, Shanghai Jiao Tong University, Shanghai, People's Republic of China

Correspondence: Yujie Zhang, School of International and Public Affairs, Shanghai Jiao Tong University, Huashan Road No. 1954, Xuhui District, Shanghai, 200030, People's Republic of China, Tel +86-186-9696-0193, Email zhangyujie@sjtu.edu.cn

Background: Corruption perception is an important risk factor for depression. On the psychological level, corruption perception will cause negative emotions to individuals. On the physiological level, higher corruption perception may mean a more unfair social environment, which is not conducive to individuals' health. However, the mechanism linking corruption perception and depression has not been fully understood.



Objective: To investigate how corruption perception affects depression, this study used trust in government and online news consumption as mediators to construct a multiple mediation model.

Methods: The data used in this study were derived from the 2016 wave and 2018 wave of China Family Panel Studies (CFPS). After eliminating samples with missing values, this study finally included 7845 samples. This study used Stata version 16.0 and a longitudinal research design to investigate the relationship between corruption perception and depression.

Results: The results revealed that the increase on corruption perception could aggravate depression ($\beta = 0.037$, p < 0.05). Meanwhile, trust in government partially mediated the effect of corruption perception on depression (indirect effect = 0.030, p < 0.001). Notably, online news consumption partially masked the effect of corruption perception on depression (indirect effect = -0.003, p < 0.01).

Conclusion: Trust in government and online news consumption may be two important mediators between corruption perception and depression. More attention should be paid to the relationship between corruption perception and depression, and mental health promotion interventions could be tailored to alleviate depression in the future.

Keywords: corruption perception, depression, trust in government, online news consumption

Introduction

One of the risk factors behind depression is corruption perception. In political science, as the core variable in the subjective evaluation method of corruption, corruption perception reflects the public's subjective evaluation of the severity of corruption and the effectiveness of anti-corruption at individual level.² Because corruption perception was found to be a contextual source of mental illness, the effect of corruption perception on depression is usually indirect.3

Generally, corruption perception can affect depression through psychological factors and physiological factors. On a psychological level, corruption perception is positively related to negative emotions, such as anxiety, anger, and disappointment. 6 Moreover, the sense of injustice caused by corruption perception can lead to hostility and powerlessness, which may eventually lead to deterioration of mental health, such as depression. On a physiological level, corruption perception is a reflection of actual corruption. Serious corruption may expand economic inequality, hinder the equalization of public services, and reduce government spending on social security such as poverty alleviation, which may affect individual health. 9,10 Therefore, this study hypothesizes:

Hypothesis 1. Higher corruption perception will aggravate depression with an effect-size below 0.10.

Though previous studies have explored how corruption perception impacts depression indirectly, there is still a lack of research on the mechanism linking corruption perception with depression. Indeed, Richey found that corruption perception could erode social trust.¹¹ And social trust is regarded as an important form of social capital, which is highly correlated with depression.¹² Moreover, Van Deurzen observed that mass-media reports of corrupt scandals might play an intermediary role between corruption perception and depressive symptoms.³ However, this underlying mechanism between corruption perception and depression has been largely ignored in recent political psychology studies.

The point is that a study of political psychology, writ large, should have better dialogue with social capital theory and political communication theory. A notable example of such a study is one by Waismel-Manor et al, who drew upon theories in social psychology, political science and communication, and constructed a mediation model, to investigate the outcome of corruption perception.¹³ This work investigated not only corruption perception but also focused on intermediary variables between corruption perception and its outcomes.

This study was designed to be an addition to the literature that examines the effects of corruption perception in several ways, not the least of which is to respond to the issues of combining theories from social psychology, political science and communication just outlined. First, unlike recent studies focused on general corruption perception in societal level, this study employed measure that focused solely on corruption perception of government. Second, as opposed to studies that use social trust as the outcome variable of corruption perception, this study takes trust in government as an intermediary variable. In addition, as opposed to earlier work that examined the intermediary role of news consumption in American society, this study examined the news consumption in Chinese society.

Finally, and perhaps most important, the dependent variable in this study has important policy implications. Specifically, this study examined how corruption perception is related to depression. In sum, this study is intended to offer new evidence to the policymakers about the link between corruption perception and depression. Results of the study were based on longitudinal data collected from 7845 samples in China.

Trust in Government as a Mediator

Trust in government is critical because there is growing evidence that trust in government is negatively associated with corruption perception and depression. Additionally, trust in government is intertwined with social trust, which impacts how individuals accumulate social capital. It Low social capital is a predictor of depression. Prior research has shown consistent evidence that people with high corruption perception tend to have low trust in government. Findings from related studies have shown that trust in government has contextual effects on happiness. Based on micro data from the East Asia Social Survey 2012, it was found that trust in government has a positive and significant contextual effect on individual happiness in China. In line with this, other studies found that when people show high levels of trust in government, these people are more likely to have better subjective well-being, and higher life satisfaction.

More importantly, trust in government was found to influence not only mental health status but also the self-rated health itself, which stems from social capital nurtured in trust in government. For instance, Engström et al found that trust in government is a type of social capital. According to the authors, those who trust their government also have more contextual social capital and better self-rated health.²⁴ Therefore, this study expects that the experience of trust in government will alleviate depression. In doing so, this study expects that trust in government will mediate the effect of corruption perception on depression. Therefore, this study hypothesizes:

Hypothesis 2. Trust in government will partially mediate the relationship between corruption perception and depression with an effect-size below 0.10.

Online News Consumption as a Mediator

Online news consumption is defined as reading political news via the Internet. Political news is a form of political communication, which aims to provide information for individuals to form their own views and participate in community, local or national affairs that affect them.²⁵ In accordance with political communication theory, political news can be

divided into three basic types: political propaganda, political communication and political marketing.²⁶ Research suggests that even in a non-democratic country, political news can be used to publicize anti-corruption propagandas, and access to controlled media keeps corruption in check to some extent.²⁷ It is true that people with higher corruption perception may pay more attention searching for corruption scandals by reading political news.²⁸ However, more political news consumption may bring about two opposite psychological effects, based on the political communication strategy of the media in a specific country.

First, political communication strategy focusing on transparent political communication may motivate media to cover more corruption scandals. When individuals read a large number of corruption scandals, they may have psychological anxiety.²⁹ Research showed that anxiety disorders comorbid with major depression.³⁰

Second, political communication strategy focusing on political propaganda and political marketing may lead to more positive media coverage of politicians. For example, a qualitative exploratory study of anti-corruption media coverage in Indonesia implied that when social media was used as a platform for political propaganda, people can get a higher sense of self-efficacy and political participation by reading political news.³¹ Because this study is aimed at the political news communication strategy in China, it is important to note that the political news reports in China are mainly positive. Therefore, reading political news tends to produce a better impression of government, while grapevine news can increase the perception of corruption.³² This also means that online news consumption in China may have a masking effect between corruption perception and depression. Taken together, this study hypothesizes:

Hypothesis 3. Online news consumption will have a masking effect in the relationship between corruption perception and depression with an effect-size below 0.05.

The Current Study

The current study aims to examine the psychological mechanisms of depression in a nationally representative Chinese sample. Evidence shows that since the reform and opening up in 1978, the trend of officials' dereliction of duty and using public power for private interests is becoming more and more obvious. It is not only the general trend of dereliction of duty and corruption, but also the trend of the number of major cases, cases involving senior cadres and the amount of corruption. Accordingly, it also inevitably leads to higher level of corruption perception. However, research on the effect of corruption perception on depression is rare in China. Therefore, it is crucial to understand how corruption perception relates to depression in Chinese context. For the purpose of this research, two mediators were selected: trust in government and online news consumption. In this way, the investigation of the psychological mechanisms behind depression can be more nuanced.

In China, the portraits of people have depression are different. From the perspective of sociology, in addition to social and economic factors, sociology also focuses on the impact of individual demographic and socio-economic characteristics (such as age, sex, income etc.) on depression.^{35,36} Thus, to ensure that the findings are generalizable, this study also included demographic and socio-economic factors as covariates in the proposed analyses. Ultimately, better understanding the linkages between corruption perception, trust in government, online news consumption, and depression is important both for theory development, as well as for efforts aimed at formulating public policies based on those mechanisms to promote mental health further.

Methods

Data and Sample

The data used in this research were derived from the 2016 and 2018 wave of China Family Panel Studies (CFPS, https://doi.org/10.18170/DVN/45LCSO) conducted by Institute of Social Science Survey of Peking University. CFPS covered 25 provinces/cities/autonomous regions with a target sample size of 16,000 households, and the respondents include all family members in the sample households, which makes CFPS data representative and authoritative with scientific research value. Moreover, CFPS used a multi-stage sampling method with a stratified and clustered probability design, which were implemented by a group of trained researchers through face-to-face interviews and later family visits and telephone surveys, which ensure the high quality of the data. CFPS is

a longitudinal survey, starting in 2010, and follow-up surveys were conducted in 2012, 2014, 2016, 2018 and 2020. The information about the respondents' corruption perception came from the retrospective survey conducted in 2016. In this survey, the respondents retrospectively reported their perception of government corruption in China. The information about the respondents' trust in government, online news consumption and depression came from the retrospective survey conducted in 2018. This survey also provided demographic and socioeconomic information about the respondents. Thus, the survey provided a reliable database to study the effect of corruption perception on depression. This study pooled the two parts of variables together and information on missing variables were excluded. In order to ensure the representativeness of the population, weights were applied. This study finally included 7845 valid samples in the present analysis.

Measures

Corruption Perception

The 5-item social perception of corruption scale was developed by Tan et al,³⁷ which has been validated in Chinese context. However, these items targeted at different corrupt subjects, including individual, industry, university and government. As this study focused on government corruption, only one item was chosen, in which the corrupt subject was government. Moreover, previous studies suggested that corruption perception of government can be assessed, as most people have experiences to interact with government at the grass-roots level. 38,39 In CFPS2016, the respondents were asked about their corruption perception, namely, "How serious do you think the problem of government corruption is in China?" The answers ranged from 1 (not serious at all) to 10 (very serious). Corruption perception was normally distributed with both skewness and kurtosis equal to 0.

Trust in Government

Measure of trust in government was adapted from the question used in the World Values Survey, 40 which assessed trust in general rather than trust in specific group of people. As this study aimed to assess trust in government, which was underpinned by systems of accountability,⁴¹ thus, it was different from general trust. Based on previous experiences, government officials are the bearer of government trust.⁴² Besides, people's trust in grass-roots government officials is different from the trust in central government officials. 43,44 Therefore, this study used measure to assess trust in grassroots government officials to represent trust in government. In CFPS2018, the respondents were asked about their trust in grass-roots government officials, namely, "How would you rate your trust in government officials of the county/countylevel city/district government?" The answers ranged from 0 (very low) to 10 (very high). Trust in government was normally distributed with both skewness and kurtosis equal to 0.

Online News Consumption

The frequency of online news consumption could be used as an indicator to predict the impact of online media on people's attitude towards government. 45,46 There are many different types of news. Paying attention to political news can better reflect personal political interest. 47 In addition, political news is more related to government performance. 47 Therefore, the frequency of online political news consumption is more relevant to this study. In CFPS2018, the respondents were asked about the frequency they read online political news, namely, "How many days in the past week have you read online political news?" The answers ranged from 0 (not a day) to 7 (every day). Online news consumption was normally distributed with both skewness and kurtosis equal to 0.

Depression

The Chinese version of the Center for Epidemiologic Studies Depression Scale (CES-D) was used to assess an individual's depression level. 48,49 The scale is composed of 8 items. Specifically, the items include: "How often do you feel depressed?" "How often do you feel it is hard to do anything?" "How often do you feel it is hard to sleep?" "How often do you feel unpleasant?" "How often do you feel lonely?" "How often do you feel unhappy?" "How often do you feel sad?" "How often

do you feel life can't go on?" The answers ranged from 1 (almost never) to 4 (almost every day). In this study, Cronbach's α was 0.76. Depression was normally distributed with both skewness and kurtosis equal to 0.

Control Variables

In order to assure the robustness of the results, this study also included some demographic and socio-economic characteristics as control variables based on previous literature, 50,51 including sex (0 = female, 1 = male), age (continuous variable), marital status (0 = not in a marriage, 1 = in a marriage), education (1 = below junior high school, 2 = above junior high school, and below undergraduate, 3 = above undergraduate), area of residence registration (0 = rural, 1 = urban) and subjective income level (1 = very low, 2 = relatively low, 3 = fair, 4 = relatively high, 5 = very high).

Statistical Analysis

The data were analyzed using Stata version 16.0 (Stata Corp; College Station, TX, USA). The internal consistency of the scales was evaluated using Cronbach's α coefficients. The analytic approach was conducted in four stages. First, this study used frequencies, mean, and standard deviations to describe the sample characteristics. Second, this study also tested bivariate correlations between the variables of interest by performing Pearson's correlation analysis to explore the relationship between variables of interest. Third, this study conducted multivariate regression analyses to examine the effect of corruption perception on depression. Fourth, the mediation analyses were conducted based on bootstrap method.⁵² A bootstrap estimation with 5000 bootstrap samples and 95% confidence intervals (CIs) was employed to test the indirect effect. If the range of the 95% CI did not contain zero for a specific effect, it implied that the mediating effect was significant. P-values less than 0.05 was considered to be statistically significant.

Before conducting the empirical analyses, a power analysis was implemented using Stata. A Monte Carlo Simulation with a size of 7000 gave a power of 0.99. Also, as the simulation size was increased beyond 7000, there was only a small amount of additional power achieved. Since most sample-size studies required a power above 0.80, simulation sizes from 7000 to 10,000 should be ample. In this study, the sample size was 7845. Therefore, this study with a large sample had higher power more than 0.80. It was highly likely that an empirical test would detect an effect of certain size if there was one.

Results

Descriptive Statistics

Table 1 displays the descriptive statistics of the samples. The total participants contained 3840 females and 4005 males. The majority of participants (6295; 80.24%) aged between 25 and 45 years old. A total of 5881 (74.96%) of them were in a marriage. More than half of participants' (5470; 69.73%) education level was above junior high school, and below undergraduate. In addition, 5592 (71.28%) participants had residence registration in rural areas. A total of 4260 (54.30%) participants rated their subjective income level as fair. Notably, most participants (6800; 86.68%) had relatively high corruption perception with score more than 5. At the same time, most participants (5074; 64.68%) had relatively high trust in government with score more than 5, too. Meanwhile, more than half of participants (4703; 59.95%) had relatively high frequency reading online political news with score more than 3. In addition, the majority participants (5892; 75.11%) had relatively mild depressive symptoms with score less than 16.

Correlation Analysis

The correlation matrix for examining the association among key variables is presented in Table 2. First, corruption perception was positively correlated with depression, which provided initial support for Hypothesis 1. Second, trust in government was negatively correlated with corruption perception, and negatively correlated with depression, which provided initial support for Hypothesis 2. Third, online news consumption was positively correlated with corruption perception, and negatively correlated with depression, which provided initial support for Hypothesis 3.

Table I Descriptive Statistics of All Variables (N = 7845)

Characteristics	N	%	Mean	Standard Deviation
Corruption perception			6.91	2.48
Score (< 5)	1045	13.32		
Score (5 +)	6800	86.68		
Trust in government			4.70	2.46
Score (< 5)	2771	35.32		
Score (5 +)	5074	64.68		
Online news consumption			3.84	2.87
Score (< 3)	3142	40.05		
Score (3 +)	4703	59.95		
Depression			13.32	3.54
Score (< 16)	5892	75.11		
Score (16 +)	1953	24.89		
Sex				
Female	3840	48.95		
Male	4005	51.05		
Age			32.68	8.03
Below 25	1219	15.54		
25 to 45	6295	80.24		
45 to 65	293	3.73		
65 and over	38	0.49		
Marital status				
Not in a marriage	1964	25.04		
In a marriage	5881	74.96		
Education			1.97	0.55
Below junior high school	1312	16.72		
Above junior high school, and below undergraduate	5470	69.73		
Above undergraduate	1063	13.55		
Area of residence registration				
Rural	5592	71.28		
Urban	2253	28.72		
Subjective income level			2.83	0.92
Very low	724	9.23		
Relatively low	1538	19.60		
Fair	4260	54.30		
Relatively high	974	12.42		
Very high	349	4.45		

Table 2 Correlations Between Key Variables (N = 7845)

Variables	Corruption Perception	Trust in Government	Online News Consumption	Depression
Corruption perception	1.000			
Trust in government	-0.191*** (0.000)	1.000		
Online news consumption	0.085*** (0.000)	0.048*** (0.000)	1.000	
Depression	0.046* (0.019)	-0.140*** (0.000)	-0.068*** (0.000)	1.000

Notes: t values in parentheses. *p < 0.05, ***p < 0.001.

Multivariate Regression Analysis

This study used multivariate regression analysis, which was based on OLS model as depression was a discrete ordinal variable, ⁵³ to investigate the association between corruption perception and depression, as shown in Table 3. Corruption

Table 3 Associations of Corruption Perception and Depression (N = 7845)

Variables	β Coefficients	t values	p values
Corruption perception	0.065***	4.10	0.000
Sex	-0.419***	-5.28	0.000
Age	0.024***	4.09	0.000
Marital status	-0.526***	-5.05	0.000
Education	-0.533***	-6.68	0.000
Area of residence registration	-0.266**	-2.8 I	0.005
Subjective income level	-0.553***	-12.87	0.000

Note: **p < 0.01, ***p < 0.001.

perception significantly aggravated depression ($\beta = 0.065$, p < 0.001), which supported Hypothesis 1. Moreover, being female/older/not in a marriage, receiving less education, having residence registered in rural areas, and having lower subjective income level were significant risk factors in aggravating depression.

Mediating Effect Analysis

This study used seemingly unrelated (SUR) model to systematically investigate the relationships between variables. ⁵⁴ The SUR model regards multiple equations as one equation, and uses the generalized least square (GLS) method to estimate the parameters of the model. Because GLS estimation uses the information of the whole model, it is better than ordinary least-squares (OLS) estimation obtained from each equation in turn. Figure 1 presents the regression coefficients for variables. The direct effect of corruption perception on depression was 0.037 (p < 0.5). As this study already had all the coefficients to compute the indirect effect, this study then used the nlcom (nonlinear combination) command three times: twice to compute the two specific indirect effects for trust in government and online news consumption, and once to compute the total indirect effect.

This study used bootstrap method to conduct mediation effect analysis, ⁵⁵ and 5000 iterations were used to estimate the mediating effect of trust in government and online news consumption with 95% confidence intervals (CIs). Table 4 presents the indirect effects. The indirect effect via trust in government was positive (effect = 0.030, 95% CI [0.022, 0.037]). However, the indirect effect via online news consumption was negative (effect = -0.003, 95% CI [-0.006, -0.001]). Meanwhile, the total indirect effect was positive (effect = 0.026, 95% CI [0.018, 0.034]). Notably, the portion of total effect that was mediated was quite large (41.27%). In sum, the results supported Hypothesis 2, 3: trust in government was a partial mediator between corruption perception, while online news consumption had a masking effect between corruption perception and depression.

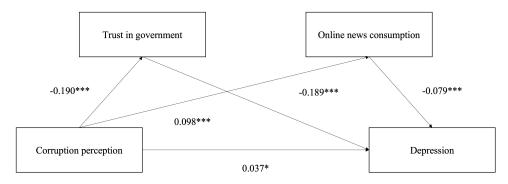


Figure I Multiple mediation model with path coefficients. **Note**: ${}^*b < 0.05$. ${}^{***}b < 0.001$.

Table 4 Analysis of the Mediating Effect of Trust in Government and Online News Consumption in the Influence of Corruption Perception on Depression (N = 7845)

	Observed Coefficient	Bootstrap Standard Error	LLCI	ULCI
Indirect effect via trust in government Indirect effect via online news consumption	0.030*** -0.003**	0.004 0.001	0.022 -0.006	0.037 -0.001
Total indirect effect	0.026***	0.004	0.018	0.034

Note: **p < 0.01, ***p < 0.001.

Abbreviations: LLCI, lower level for confidence interval; ULCI, upper level for confidence interval.

Discussion

Using a longitudinal research design, this study found that corruption perception could aggravate depression. Specifically, this study observed the effect of corruption perception on depression was partially mediated by trust in government. Moreover, online news consumption had a masking effect on the relationship between corruption perception and depression. With regard to the contribution to psychological research, this study has identified a unique psychological mechanism (ie, corruption perception, trust in government, and online news consumption) to explain the effect of corruption perception on depression. This psychological mechanism is rooted in social capital theory and political communication theory. ^{17,26} By combining theories from social psychology, political science and communication, this study extended the literature that examines the effects of political stressors on mental health. ^{56–59}

In this study, corruption perception was found to have a negative effect on mental health. The findings here are in line with the earlier results of Sharma et al, who also utilized both cross-sectional data and longitudinal data to investigate the impact of corruption perception on mental health in Vietnam.¹ This may be due to the concept of "political stressor", with individuals experienced high levels of stress when perceiving more corruption.^{4,5} A study using nationally representative surveys suggests that more than one-fifth respondents reported depressive symptoms due to political stress, and almost 11% respondents expressed that political stress hurt their physical health to some degree.⁶⁰ As a developing country with immature legal system, corruption in China continues despite repeated prohibitions.³³ The results showed that people's perception of corruption in China is detrimental for their mental health. Therefore, corruption perception is an important risk factor for depression and further interventions should be tailored for mental health promotion.

Next, the results contribute a new finding that trust in government partially mediated the positive relationship between corruption perception and depression. Previous empirical studies have documented a negative association between corruption perception and trust in government. Additionally, previous studies have shown that high levels of trust in government negatively predict depressive symptoms. In line with prior findings, the current study indicated that individuals' corruption perception, trust in government, and depression were significantly intercorrelated. The findings provide further evidence of trust in government as effective mediating factor that can transmit the effect of corruption perception on depression. The theorized mechanism behind this association is that individuals with higher levels of corruption perception are more likely distrust government, which in turn induce more distrust behaviors towards public institutions. The decrease of institutional trust is not conducive for accumulating social capital. Consistent with social capital theory, loss of social capital forms a pathway to explain the adverse health outcomes.

In addition to a mediating role, analyses revealed the masking role of online news consumption in the association between corruption perception and depression, such that online news consumption weakened the psychological negative impact of corruption perception. Theoretically, the political communication theory suggests that positive media coverage acts as a buffer to reduce the adverse impact of political stress on mental health.³¹ Consistent with this theory, the findings affirmed that in Chinese context, political news mainly focused on positive reports, such as promoting anti-corruption actions and shaping the image of a transparent government.³²

There may be many reasons why online political news consumption can reduce the negative psychological effects of corruption perception: First, people who pay attention to online political news may have more understanding of the operation of the bureaucratic system. Therefore, they can look at corruption more dialectically, understand that the

governance of corruption is a gradual process, and can look at the improvement of corruption from a development perspective; Second, people who read more online political news may also pay attention to other aspects of news, such as entertainment, literature and art, which shows that they have a wide range of interests, which can promote mental health to some extent; Third, reading online political news itself is also a recreational process. Maybe people do not care about the content of political news, but more about the entertainment lace of politicians. Recreational gossip itself can also alleviate the aggravation of depression caused by corruption perception. 63

In China, people's cognition of corruption is a gradual process. Reading more political news itself can also improve people's political literacy, so that people may no longer have a strong sense of disappointment in society when they hear about corruption events and perceive corruption but can gradually cultivate their psychological resilience to corruption and reduce the negative psychological impact of corruption perception. This is the first study to date that reveal the masking effect of online news consumption between corruption perception and depression, and these findings should be further explored by future researchers.

The present findings have practical implications for the government for understanding the psychological mechanism behind depression, such that the government may more effectively be able to promote mental health by formulating corresponding public policies to decrease corruption perception, increase people's trust in government, and pay attention to the influence of media consumption habits on people's mental health. Work in public health has acknowledged that corruption perception is an important risk factor for depression. Thus, by combining theories from social psychology, political science and communication, this study provides a positive and exciting answer, that is, the path from corruption perception to depression can be influenced by trust in government and online news consumption.

Limitations and Future Directions

The present study has several limitations. Firstly, this study employed self-report instruments, which are subject to biases including recalling inaccuracy and social desirability. Second, the sample used here was confined to the Chinese cultural context, so the findings may not readily apply to other cultural settings. Third, although this study used longitudinal design, without experimental manipulation, the study was further prevented from drawing conclusions about causal relationships that may exist between corruption perception and depression. Last but not least, as this being a self-selected sample: the people who already agree with the news may be more likely to watch them, and to already trust the government. For these people, they may also have more privilege or other buffers that could account for the masking effect of online news consumption between corruption perception and depression. For example, these people may be middle-class, with mobile devices and enough leisure time to pay attention to online political news. As a results, these people may be different from the low-income groups without electronic equipment and engaged in busy physical labor. Therefore, further study needs to pay attention to the limitation of self-selected sample. When generalizing the conclusions of this study, it is necessary to conduct further qualitative localization research in combination with the characteristics of the target population.

In spite of the above limitations, however, the present study contributes increased understanding about how corruption perception relates to depression. The findings may stimulate additional research on the association between political stressors and depression, and future theoretical studies on the underlying psychological mechanisms.

Conclusions

This study was the first to examine how corruption perception relates to depression by building a multiple mediation model in the context of Chinese society. People who have higher corruption perception are more likely to have depressive symptoms. Notably, this relationship is partially mediated by trust in government and masked by online news consumption. These findings have important implications for government to formulate public policies aiming at alleviating depression. As the COVID-19 pandemic in China has made the public pay more attention to government corruption (large-scale nucleic acid testing costs are reimbursed by the medical insurance, but the public has doubts about the transparency of reimbursement standards and processes). Therefore, government should pay more attention to whether

people's perception of corruption has increased and its impact on their mental health, so as to take timely tailored intervention measures.

Data Sharing Statement

All the datasets can be accessed at the Peking University Open Research Data after being authorized.

Disclosure

The author reports no conflicts of interest in this work.

References

- 1. Sharma S, Singhal S, Tarp F. Corruption and mental health: evidence from Vietnam. *J Econ Behav Organ*. 2021;185:125–137. doi:10.1016/j. iebo.2021.02.008
- 2. Melgar N, Rossi M, Smith TW. The perception of corruption. Int J Public Opin Res. 2010;22(1):120-131. doi:10.1093/ijpor/edp058
- 3. Van Deurzen I. And justice for all: examining corruption as a contextual source of mental illness. Soc Sci Med. 2017;173:26–34. doi:10.1016/j. socscimed 2016.11.033
- 4. Gillanders R. Corruption and anxiety in sub-saharan Africa. Econ Gov. 2016;17(1):47-69. doi:10.1007/s10101-015-0177-6
- Birch S, Allen NJ, Sarmiento-Mirwaldt K. Anger, anxiety and corruption perceptions: evidence from France. Polit Stud. 2017;65(4):893–911. doi:10.1177/0032321717691294
- Smilov D, Dorosiev R. Corruption in Bulgaria: contested perceptions, shared disappointment. In: The Social Construction of Corruption in Europe. Routledge; 2016:237–260.
- 7. Smith RH, Parrott WG, Ozer D, et al. Subjective injustice and inferiority as predictors of hostile and depressive feelings in envy. *Pers Soc Psychol Bull*. 1994;20(6):705–711. doi:10.1177/0146167294206008
- 8. Olken BA. Corruption perceptions vs. corruption reality. J Public Econ. 2009;93(7-8):950-964. doi:10.1016/j.jpubeco.2009.03.001
- 9. Witvliet MI, Kunst AE, Arah OA, et al. Sick regimes and sick people: a multilevel investigation of the population health consequences of perceived national corruption. *Trop Med Int Health*. 2013;18(10):1240–1247. doi:10.1111/tmi.12177
- Factor R, Kang M. Corruption and population health outcomes: an analysis of data from 133 countries using structural equation modeling. Int J Public Health. 2015;60(6):633–641. doi:10.1007/s00038-015-0687-6
- 11. Richey S. The impact of corruption on social trust. Am Polit Res. 2010;38(4):676-690. doi:10.1177/1532673X09341531
- 12. Fujiwara T, Kawachi I. A prospective study of individual-level social capital and major depression in the United States. *J Epidemiol Community Health*. 2008;62(7):627–633. doi:10.1136/jech.2007.064261
- 13. Waismel-Manor I, Moy P, Neumann R, et al. Does corruption corrupt? The behavioral effects of mediated exposure to corruption. *Int J Public Opin Res.* 2022;34(1):edab031. doi:10.1093/ijpor/edab031
- Morris SD, Klesner JL. Corruption and trust: theoretical considerations and evidence from Mexico. Comp Polit Stud. 2010;43(10):1258–1285. doi:10.1177/0010414010369072
- 15. Matsushima M, Tsuno K, Okawa S, et al. Trust and well-being of postpartum women during the COVID-19 crisis: depression and fear of COVID-19. SSM Popul Health. 2021;15:100903. doi:10.1016/j.ssmph.2021.100903
- 16. Newton K. Trust, social capital, civil society, and democracy. Int Polit Sci Rev. 2001;22(2):201-214. doi:10.1177/0192512101222004
- 17. Li Y, Pickles A, Savage M. Social capital and social trust in Britain. Eur Social Rev. 2005;21(2):109-123. doi:10.1093/esr/jci007
- 18. Kouvonen A, Oksanen T, Vahtera J, et al. Low workplace social capital as a predictor of depression: the Finnish Public Sector Study. *Am J Epidemiol*. 2008;167(10):1143–1151. doi:10.1093/aje/kwn067
- 19. Weng WW, Woo CK, Cheng YS, et al. Public trust and corruption perception: disaster relief. Appl Econ. 2015;47(46):4967-4981.
- 20. Sapsford R, Tsourapas G, Abbott P, et al. Corruption, trust, inclusion and cohesion in North Africa and the Middle East. *Appl Res Qual Life*. 2019;14(1):1–21. doi:10.1007/s11482-017-9578-8
- 21. Fu X. The contextual effects of political trust on happiness: evidence from China. Soc Indic Res. 2018;139(2):491–516. doi:10.1007/s11205-017-1721-2
- 22. Hudson J. Institutional trust and subjective well-being across the EU. Kyklos. 2006;59(1):43-62. doi:10.1111/j.1467-6435.2006.00319.x
- 23. Clench-Aas J, Holte A. Political trust influences the relationship between income and life satisfaction in Europe: differential associations with trust at national, community, and individual level. *Front Public Health*. 2021;9:629118. doi:10.3389/fpubh.2021.629118
- 24. Engström K, Mattsson F, Järleborg A, et al. Contextual social capital as a risk factor for poor self-rated health: a multilevel analysis. *Soc Sci Med*. 2008;66(11):2268–2280. doi:10.1016/j.socscimed.2008.01.019
- 25. Bode L. Political news in the news feed: learning politics from social media. *Mass Commun Soc.* 2016;19(1):24–48. doi:10.1080/15205436.2015.1045149
- 26. Blumler JG. Core theories of political communication: foundational and freshly minted. Commun Theory. 2015;25(4):426–438. doi:10.1111/comt.12077
- 27. Dong B, Torgler B. Causes of corruption: evidence from China. China Econ Rev. 2013;26:152-169. doi:10.1016/j.chieco.2012.09.005
- 28. Hassid J, Brass JN. Scandals, media and good governance in China and Kenya. *J Asian Afr Stud.* 2015;50(3):325–342. doi:10.1177/0021909614528865
- 29. Chang K, Park J. A heterogeneous rally effect for a corrupt president: partisanship, regional sentiment, and anxiety against a corruption scandal. Democratization. 2020;27(8):1354–1375. doi:10.1080/13510347.2020.1791825
- 30. Fava M, Rankin MA, Wright EC, et al. Anxiety disorders in major depression. Compr Psychiat. 2000;41(2):97–102. doi:10.1016/S0010-440X(00) 90140-8

31. Prabowo HY, Hamdani R, Mohd Sanusi Z. The new face of people power: an exploratory study on the potential of social media for combating corruption in Indonesia. *Australas Account Bus Financ J.* 2018;12(3):20–40.

- 32. Zhu J, Lu J, Shi T. When grapevine news meets mass media: different information sources and popular perceptions of government corruption in mainland China. *Comp Polit Stud.* 2013;46(8):920–946. doi:10.1177/0010414012463886
- 33. Wederman A. The intensification of corruption in China. China Q. 2004;180:895-921. doi:10.1017/S0305741004000670
- 34. Zhang H, Song Y, Tan S, et al. Anti-corruption efforts, public perception of corruption, and government credibility in the field of real estate: an empirical analysis based on twelve provinces in China. *Cities*. 2019;90:64–73. doi:10.1016/j.cities.2019.01.042
- Cheng H, Furnham A. Personality, self-esteem, and demographic predictions of happiness and depression. Pers Individ Differ. 2003;34(6):921–942. doi:10.1016/S0191-8869(02)00078-8
- 36. Zimmerman FJ, Katon W. Socioeconomic status, depression disparities, and financial strain: what lies behind the income-depression relationship? Health Econ. 2005;14(12):1197–1215. doi:10.1002/hec.1011
- 37. Tan X, Liu L, Huang Z, et al. Working for the hierarchical system: the role of meritocratic ideology in the endorsement of corruption. *Polit Psychol.* 2017;38(3):469–479. doi:10.1111/pops.12341
- 38. Tan X, Liu L, Huang Z, et al. The effects of general system justification on corruption perception and intent. Front Psychol. 2016;7:1107. doi:10.3389/fpsyg.2016.01107
- 39. Zheng W, Liu L, Huang Z, et al. Life satisfaction as a buffer of the relationship between corruption perception and political participation. *Soc Indic Res.* 2017;132(2):907–923. doi:10.1007/s11205-016-1318-1
- 40. Wang L, Gordon P. Trust and institutions: a multilevel analysis. J Socio Econ. 2011;40(5):583-593. doi:10.1016/j.socec.2011.04.015
- 41. Misztal BA. Trust and cooperation: the democratic public sphere. J Sociol. 2001;37(4):371–386. doi:10.1177/144078301128756409
- 42. Lu Y, Lee JK. Determinants of cross-cutting discussion on Facebook: political interest, news consumption, and strong-tie heterogeneity. *New Media Soc.* 2021;23(1):175–192. doi:10.1177/1461444819899879
- 43. Grimmelikhuijsen S, Knies E. Validating a scale for citizen trust in government organizations. *Int Rev Adm Sci.* 2017;83(3):583–601. doi:10.1177/0020852315585950
- 44. Intawan C, Nicholson SP. My trust in government is implicit: automatic trust in government and system support. *J Polit.* 2018;80(2):601–614. doi:10.1086/694785
- 45. Eveland WP, Hively MH. Political discussion frequency, network size, and "heterogeneity" of discussion as predictors of political knowledge and participation. *J Commun.* 2009;59(2):205–224. doi:10.1111/j.1460-2466.2009.01412.x
- 46. Knobloch-Westerwick S, Johnson BK. Selective exposure for better or worse: its mediating role for online news' impact on political participation. *J Comput Mediat Commun.* 2014;19(2):184–196. doi:10.1111/jcc4.12036
- 47. Boulianne S, Shehata A. Age differences in online news consumption and online political expression in the United States, United Kingdom, and France. Int J Press Polit. 2022;27(3):763–783. doi:10.1177/19401612211060271
- 48. Radloff LS. The CES-D scale: a self-report depression scale for research in the general population. Appl Psychol Meas. 1977;1(3):385–401. doi:10.1177/014662167700100306
- 49. Wang Y, Zhang H, Feng T, et al. Does internet use affect levels of depression among older adults in China? A propensity score matching approach. BMC Public Health. 2019;19(1):1–10. doi:10.1186/s12889-019-7832-8
- 50. Buckman JEJ, Saunders R, Stott J, et al. Role of age, gender and marital status in prognosis for adults with depression: an individual patient data meta-analysis. *Epidemiol Psychiatr Sci.* 2021;30:42. doi:10.1017/S2045796021000342
- 51. Sampson L, Ettman CK, Galea S. Urbanization, urbanicity, and depression: a review of the recent global literature. *Curr Opin Psychiatr*. 2020;33 (3):233–244. doi:10.1097/YCO.000000000000588
- 52. Igartua JJ, Hayes AF. Mediation, moderation, and conditional process analysis: concepts, computations, and some common confusions. *Span J Psychol*. 2021;24:49. doi:10.1017/SJP.2021.46
- 53. Winship C, Mare RD. Regression models with ordinal variables. Am Sociol Rev. 1984;49(4):512-525. doi:10.2307/2095465
- 54. Zellner A. An efficient method of estimating seemingly unrelated regressions and tests for aggregation bias. *J Am Stat Assoc.* 1962;57 (298):348–368.
- 55. Preacher KJ, Hayes AF. SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behav Res Methods Instr Comput.* 2004;36(4):717–731. doi:10.3758/BF03206553
- 56. Bernardi L, Gotlib IH. COVID-19 stressors, mental/emotional distress and political support. West Eur Polit. 2022;1–12. doi:10.1080/01402382.2022.2055372
- 57. Powdthavee N, Plagnol AC, Frijters P, et al. Who got the brexit blues? The effect of Brexit on subjective wellbeing in the UK. *Economica*. 2019;86 (343):471–494. doi:10.1111/ecca.12304
- 58. Roche MJ, Jacobson NC. Elections have consequences for student mental health: an accidental daily diary study. *Psychol Rep.* 2019;122 (2):451–464. doi:10.1177/0033294118767365
- 59. Yan BW, Hsia RY, Yeung V, et al. Changes in mental health following the 2016 presidential election. J Gen Intern Med. 2021;36(1):170–177. doi:10.1007/s11606-020-06328-6
- 60. Smith KB, Porter D. Politics is making us sick: the negative impact of political engagement on public health during the Trump administration. *PLoS One*. 2022;17(1):e0262022. doi:10.1371/journal.pone.0262022
- 61. Shortt SED. Making sense of social capital, health and policy. Health Policy (New York). 2004;70(1):11-22. doi:10.1016/j.healthpol.2004.01.007
- 62. Dutta-Bergman M. Depression and news gathering after September 11: the interplay of affect and cognition. Commun Res Rep. 2005;22(1):7–14. doi:10.1080/0882409052000343471
- 63. Boukes M, Vliegenthart R. News consumption and its unpleasant side effect: studying the effect of hard and soft news exposure on mental well-being over time. *J Media Psychol.* 2017;29(3):137–147. doi:10.1027/1864-1105/a000224
- 64. Gero K, Kim D. Prospective associations between US state-level corruption and individual-level cardiovascular risk factors among middle-aged Americans: the National Longitudinal Survey of Youths 1979. Int J Public Health. 2020;65(9):1737–1748. doi:10.1007/s00038-020-01497-x

Psychology Research and Behavior Management

Dovepress

Publish your work in this journal

Psychology Research and Behavior Management is an international, peer-reviewed, open access journal focusing on the science of psychology and its application in behavior management to develop improved outcomes in the clinical, educational, sports and business arenas. Specific topics covered in the journal include: Neuroscience, memory and decision making; Behavior modification and management; Clinical applications; Business and sports performance management; Social and developmental studies; Animal studies. The manuscript management system is completely online and includes a very quick and fair peer-review system, which is all easy to use. Visit http://www.dovepress.com/testimonials.php to read real quotes from published authors.

 $\textbf{Submit your manuscript here:} \ \texttt{https://www.dovepress.com/psychology-research-and-behavior-management-journal} \\$



