Factors associated with public support for a lockdown measure in China during the COVID-19 pandemic

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The lockdown measures to contain the coronavirus disease 2019 (COVID-19) pandemic caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in China in early 2020 was considered effective by the World Health Organization and many academics around the world. At the same time, the Western media labelled these measures as draconian. This research examined the reasons why the Chinese people were willing to support such measures. Based on an online survey of 528 Chinese participants, conducted in April 2020, the results revealed that the participants’ instrumental attitudes (e.g., the outcome of the lockdown), but not experiential attitudes (i.e., the experience of the lockdown), were predictive of their support for a lockdown policy. Further analysis showed that those with higher communitarian worldviews had favourable instrumental attitudes and strong support regardless of the level of the perceived severity of the virus, whereas those with lower communitarian worldviews had more favourable instrumental attitudes and policy support when perceived severity was high than when it was low. Both theoretical and practical implications are discussed.

Keywords: attitudes, communitarian worldviews, COVID-19, lockdown, policy support, risk perceptions.
the health risk literature. First, this analysis sought to explain why Chinese people were willing to accept such a compulsory health measure that could infringe individual freedom and take a toll on their physical and emotional wellbeing. In particular, this manuscript examines the role of instrumental and experimental attitudes in public support for a lockdown or close management policy. Of note, although the health literature has examined public support for a vaccine mandate (e.g., Motta et al., 2018), most health behavioural promotions focused on the voluntary adoption of personal health behaviours. The COVID-19 lockdown in China offers a different scenario, where the public was forced to undergo a drastic measure.

Second, the present analysis examines the antecedents of instrumental and experimental attitudes within the reasoned action theoretical framework: How are risk perceptions (both susceptibility and severity) and communitarian cultural worldviews related to the attitudes and policy support of the Chinese people? Such an analysis can provide insights into the interrelationships between risk perceptions and cultural worldviews. Furthermore, research on cultural risk perceptions considers the relationships between cultural worldviews and risk perceptions to be linear and not interactive (Kahan et al., 2007). This research differentiates two types of risk perceptions (e.g., susceptibility and severity; Rosenstock, 1974) and tests the interaction between communitarian cultural worldviews and risk perceptions on attitudes and policy support, while at the same time situating cultural worldviews and risk perceptions within an attitude–behaviour framework (Fishbein & Ajzen, 2010).

The reasoned action theoretical framework: Attitudes and public policy support

The present analysis adopts the reasoned action theoretical framework (Figure 1; Fishbein & Ajzen, 2010) as the overarching theoretical framework. The relationships to be tested are shown in Figure 2. According to this theory, the intentions of individuals are determined by their attitudes (i.e., one’s favourable or unfavourable evaluation of a behaviour) and subjective norms (i.e., perceived social pressure for performing a behaviour).1 This theoretical framework has accumulated much support over the last four decades (e.g., Armitage & Conner, 2001; Fishbein & Ajzen, 2010). In general, attitudes are the strongest predictor, whereas subjective norms are the weakest.

Following the reasoned action tradition, attitudes are conceptualized as an individual’s general evaluation of a policy or a behaviour (e.g., whether it is good or wise). Furthermore, attitudes can be conceptualized as instrumental and experiential (Fishbein & Ajzen, 2010). Instrumental attitudes refer to the positive or negative outcome associated with performing a behaviour (e.g., wise/not wise, beneficial/not beneficial), whereas experimental attitudes refer to the evaluation of the experience associated with performing a behaviour (e.g., boring/not boring; Fishbein & Ajzen, 2010). In addition to the content validity exhibited by these items, studies found that the two attitudes often loaded on two different factors (e.g., Mummery & Wankel, 1999). Regarding China’s COVID-19 lockdown, the Director-General of WHO, Dr. Tedros, commented that the Chinese government “is to be congratulated for the extraordinary measures it has taken to contain the #2019nCoV outbreak, despite the severe social & economic impact those measures are having on the Chinese people” (WHO, 2020b). That is, the policy of lockdown can be evaluated as a good or wise decision in terms of its efficacy in containing the virus, while at the same time it was not an enjoyable measure for people to follow through.

In public policy research, public attitudes and policy support are sometimes conflated: Positive attitudes towards a policy are sometimes considered as support for a policy (e.g., Motta et al., 2018). The present analysis differentiates the two. According to the Oxford Advanced Learner's Dictionary (Wemheier, 2005), support, when used as a verb, is defined as “to help or encourage [somebody/something] by saying or showing that you agree with them/it” or “to give or be ready to give help to [somebody] if they need it.” As a noun, support is similarly defined as “encouragement and help that you give to [somebody/something] because you approve of them and want them to be successful.” These definitions show that support can be both readiness or intention (i.e., “be ready”) and behaviour (i.e., “to help” or “to encourage” by “saying or showing”). Habibov et al. (2018) used “willingness to pay more taxes” as support for public welfare. Similarly, Wolters et al. (2021) used willingness to act and support of environmental actions and policies interchangeably. In terms of measurement, in addition to using “willingness” (Wang, 2017; Wolters et al., 2021), McLeod et al. (1997) used items related to “support for federal or local laws” and “banning sale of the content” to measure support for censorship. Ding et al. (2011) and Zhao et al. (2011) used “support” or “oppose” to measure support for several climate-related policies.

As such, the present analysis takes the position that policy support is different from attitudes towards a policy (i.e., general evaluation of a policy – whether it is good or not). The present analysis and later measurement did not explicitly include a behavioural component in conceptualizing policy support because the lockdown was mandatory and strictly enforced. Thus, whether or
not residents supported the policy, they did not have a choice to behave otherwise. A participant’s readiness or willingness to follow a policy is considered as intention in reasoned action research (Fishbein & Ajzen, 2010; Sheppard et al., 1988). As such, in the present investigation, policy support is conceptualized as a construct similar to intentions.

Research has found that, in general, both instrumental and experiential attitudes predict intentions (Conner, 2018). More specifically, research on policy support often shows that public opinion, beliefs or attitudes are an important predictor of eventual support. For example, Dietz et al. (2007) found that pro-environmental beliefs/attitudes were positively related to climate change policy preferences or support. In this research, higher instrumental attitudes mean more favourable, and higher experiential attitudes mean more negative. Based on the cumulative evidence between subjective norms and intentions (Armitage & Conner, 2001; Fishbein & Ajzen, 2010), support for a lockdown and quarantine policy will also be predicted by an individual’s subjective norms. Taken together, I proposed a hypothesis:

H1: The Chinese support for a lockdown policy would be (a) negatively predicted by their experiential attitudes and positively predicted by their (b) instrumental attitudes and (c) subjective norms.

**Risk perceptions: Perceived susceptibility and severity**

However, the sufficiency of the theory of reasoned action has been repeatedly questioned. The most recent version of the theoretical framework (Fishbein & Ajzen, 2010) adds that distal (i.e., antecedent) variables predict beliefs and attitudes, which in turn predict intentions and behaviour (Figure 1). Culture, personality variables, risk perceptions, and media campaigns are examples of distal variables. However, Fishbein and Ajzen noted that many distal variables exist and thus did not list all possible relationships between distal variables and the core reason action variables. Compared with several other extensions, including moral norms, self-identity and affective beliefs (Fishbein & Ajzen, 2010), the inclusion of risk perceptions and communitarian worldviews is highly relevant to the prevention of an infectious disease that requires collective efforts. The present research draws on the risk literature and argues that the role of risk perceptions and cultural worldviews in attitudes and policy support can be both linear and interactive.

According to the health belief model (e.g., Janz & Becker, 1984; Rosenstock, 1974), risk perceptions are the subjective estimate of the probability that something negative may happen (i.e., susceptibility) and the consequence of the risk (i.e., severity). An early narrative review (Janz & Becker, 1984) showed that the efficacy of the two measures in motivating health behaviours varied by behaviours and samples and needed to be determined empirically. Because risk perceptions are the subjective estimate of one’s susceptibility to a disease and its severity, they are influenced by many factors, for example, familiarity with the risk and the controllability of the risk (Slovic et al., 1982). Additional factors, such as individual and social characteristics, can also shape the public’s risk perceptions and policy support (Adger et al., 2009; Ostrom, 2005).
Communitarian worldviews

One stream of research in recent decades has focused on the relationship between cultural worldviews and risk perceptions (e.g., Dake, 1991; Douglas & Wildavsky, 1982; Kahan, 2012). The cultural theory of risk states that individuals form risk perceptions to conform to their cultural worldviews (e.g., Kahan, 2012). Communitarianism and individualism are one important dimension of cultural worldviews and are at two ends of a continuum. Communitarianism values community, cooperation, and group work, whereas individualism values self-regulation and autonomy (Dake, 1991). Those who subscribe to a communitarian worldview (vs. individualistic) believe that they should achieve goals by interacting and collaborating with others and are more likely to support government regulations that can help ensure collective action. Individualists, on the other hand, favour policies (or lack of) that would allow for individual freedom.

Because communitarians are concerned about collective benefits and risks (Douglas & Wildavsky, 1982), they are more likely to be concerned about the risks that may be inflicted on their group and react favourably to preventive measures. Much of the previous cultural risk research has focused on environmental and technological risks (Stevenson et al., 2014). For example, environmental risk related to climate change would influence many people instead of one person (e.g., Stevenson et al., 2014; Xue et al., 2014). As such, those with stronger communitarian worldviews (vs. less strong) estimated higher environmental risk (Stevenson et al., 2014; Wang, 2017). Likewise, communitarians (vs. individualists) are more likely to experience higher risk perceptions of SARS-CoV-2, a highly infectious and deadly respiratory disease that can spread quickly in communities and across the world. Taken together, communitarians (vs. individualists) will be more likely to form higher instrumental attitudes (i.e., preventive outcome) and policy support when considering COVID-19 risk and be less likely to hold unfavourable experiential attitudes (Wang, 2021).

It should be acknowledged that some research examining the relationship between cultural worldviews and risk perceptions used a general measure of risk and did not examine susceptibility and severity as separate constructs (e.g., Dake, 1991; Kahan et al., 2010; Stevenson et al., 2014). For example, Kahan et al. (2007) used items related to both “spread” and “endanger health” that resembled susceptibility and severity. On the other hand, other researchers used measures similar to perceived severity. For example, Wang (2017) measured environmental risks based on the consequences of climate change, which resembled severity.

Interaction between risk perceptions and communitarian worldviews on predicting attitudes and policy support

A careful examination of the previous theorizing shows that an interaction effect between communitarian and risk perceptions is in order. Because communitarians are concerned about collective risks and benefits, they often react strongly to risks that may not manifest strongly or are abstract or low, for example, climate change risks (Stevenson et al., 2014; Wang, 2017). A highly infectious disease such as COVID-19 imposes collective risks to the whole society in terms of both susceptibility (i.e., how susceptible they are to the virus) and severity (i.e., how severe the consequences are). As such, because strong communitarians pay attention to risks, they would form favourable attitudes towards the effectiveness of preventive measures (i.e., instrumental attitudes) and less negative attitudes towards sacrifices and enduring possible hardship (i.e., experiential attitudes), regardless of the risk levels. That is, even moderate or low risk levels may prompt them to form higher preventive attitudes and endure negative experiences. On the other hand, because those with less strong communitarian views tend to dismiss risks, their instrumental and experiential attitudes would be less likely to be guided by risk perceptions if the risks are not perceived to be high and can be dismissed. However, when perceived risks are strong enough to affect anyone and cannot be dismissed, they should also form favourable attitudes towards the preventive measures and less negative experiential attitudes.

Consistent with this theorizing, Stevenson et al. (2014) found that high communitarian adolescents had high acceptance of climate policies regardless of the level of their climate change knowledge (e.g., the impact of greenhouse gasses). On the other hand, low communitarian adolescents only showed high acceptance when their knowledge (or perceived impact) was high rather than when it was low.

Furthermore, the present investigation further hypothesizes that the interaction effect can be directly related to policy support in addition to being indirectly related to policy support via attitudes. The reasoned action theoretical framework postulates indirect effects on intentions or policy support. However, other health literature supports the possibility of a direct relationship. For example, the health belief model (Rosenstock, 1974) places perceived susceptibility and severity as parallel constructs to perceived benefits (i.e., the outcome of a preventive measure) and self-efficacy and directly predicts preventive behaviours. In addition, the theorizing on cultural worldviews shows that the reasoning behind a decision or thinking can be both intuitive and logical (Buchtel & Norenzayan, 2008). That is, cultural
worldviews (or values), as innate values, can be directly associated with and used to justify choices or actions (Roccas & Sagiv, 2010). The direct relationship between the innate worldviews and intentions or behaviour is strong (Roccas & Sagiv, 2010) and cannot be dismissed or termed as indirect only. Taken together, two hypotheses are proposed.

H2: There is an interaction effect between communitarianism and perceived susceptibility, such that participants with a high level of communitarianism form (a) favourable instrumental attitudes and (b) negative experiential attitudes towards the lockdown process, and (c) strong policy support regardless of perceived susceptibility, whereas participants with a lower level of communitarianism form a higher level of the above dependent variables when perceived susceptibility is high compared with when it is low.

H3: There is an interaction effect between communitarianism and perceived severity such that participants with a high level of communitarianism form (a) favourable instrumental attitudes, (b) negative experiential attitudes towards the lockdown process, and (c) strong policy support regardless of perceived severity, whereas participants with a lower level of communitarianism form a higher level of the above dependent variables when perceived severity is high compared with when it is low.

Method

Data for this research were collected through an online survey conducted on 13 and 14 April 2020 after Wuhan, the Chinese epicentre of the novel coronavirus and the capital city of Hubei province, officially ended its lockdown on 8 April 2020. Other cities in Hubei lifted their lockdown policy in mid or late March. In comparison, many other parts of China experienced a shorter period of lockdown and close management of their residents from late January to March 2020.

Ethical Approval

This project was approved by the human subjects office at Rochester Institute of Technology, Rochester, NY, United States. Participants viewed and agreed to an informed consent form before they completed the survey.

Sample

This research used an online panel provided by wjx.cn, a Chinese online sample panel provider. According to the description on wjx.cn, more than 1 million participants take surveys through its website daily. These participants were then randomly selected by wjx.cn and invited to join its online panel. Wjx.cn currently has 2.6 million panel members.

The final sample consisted of a total of 528 participants, representing a response rate of 23.4%. The sample size was determined by the rule of thumb and G*Power. For confirmative factor analysis, at least 10 cases per indicator (23 indicators total in this manuscript) were required. For regression analysis, using a small effect size of $f^2 = .02$, alpha = .05 (two-tailed), and power = .80, G*Power determined that 395 cases were required. Having 528 participants in this sample provided enough cases for regression-based statistical analysis. A total of 217 lived in Hubei province; the remaining 311 lived elsewhere in China. The ratio of males and females was evenly split. The average age of the sample was 29.7 years ($SD = 7.7$), 99% of the sample was of Han ethnicity, the average annual income was Chinese RMB88,400 ($\approx$US$12,462; $SD = $RMB6,546), and the average number of years of education was 15.2 ($SD = 2.6$). Of all participants, 92 were college or graduate students; three were unemployed; the remaining listed a variety of occupations, including teachers, accountants, car technicians, salespersons, managers, and factory workers.

Questionnaire

The questionnaire contained several batteries of questions. Questions related to this analysis are listed below. Unless otherwise indicated, responses ranged from 1 (strongly disagree) to 7 (strongly agree). The scales below were submitted for confirmatory factor analysis. Based on the robust maximum likelihood estimate in LISREL, the model showed satisfactory fit statistics: Satorra-Bentler $\chi^2$ (209, $N = 528$) = 318.8, $p < .001$, root mean square error of approximation (RMSEA) = .032, 90% confidence interval (CI) of RMSEA = .024 ~ .038, comparative fit index = .99, and standardized root mean square residual = .045. All items loaded on their respective factors and standardized factor loadings ranged from .62 to .97. Standardized factor loadings for the questionnaire items, construct reliabilities, and average variance extracted (AVE) are presented in Table 1.

Communitarian worldviews were based on four items adapted from the collectivist cultural value scale (Triandis & Gelfand, 1998) and the communitarian worldview scale (Kahan, 2012): “It is important to me I respect the decisions made by my group,” “everyone should contribute to their group,” “the government should help advance society’s goals,” and “the government should help those in need.” The four items were selected from an initial pool of seven items and loaded on one dimension. Alpha coefficient was .73.
TABLE 1
Confirmatory Factor Analysis and Standardized Factor Loadings of Measurement Items of the Variables

| Factor and Scale Item | Standardized Factor Loading |
|-----------------------|-----------------------------|
|                       |                             |
| Communitarian worldviews (construct reliability = .77, AVE = .47) |                             |
| It is important to me I respect the decisions made by my group | .74 |
| Everyone should contribute to their group | .62 |
| The government should help advance society’s goals | .69 |
| The government should help those in need | .67 |
| Perceived susceptibility (construct reliability = .94, AVE = .85) |                             |
| During the lockdown (or close management) period, …, the likelihood of me getting the novel coronavirus was high if I had gone out of my community. | .91 |
| “…, the likelihood of my family getting the novel coronavirus was high if my family had gone out of my community” | .98 |
| “…, the likelihood of my neighbours getting the novel coronavirus was high if they had gone out of the community.” | .87 |
| Perceived severity (construct reliability = .90, AVE = .74) |                             |
| During the lockdown/close management period, …, if I had gotten the novel coronavirus, the consequences would be serious | .92 |
| … if my family had gotten the novel coronavirus, the consequence would be serious | .93 |
| … if my neighbours had gotten the novel coronavirus, the consequence would be serious | .72 |
| Experiential attitudes (construct reliability = .81, AVE = .59) |                             |
| Regarding the lockdown (or close management) where you lived, it was inconvenient | .72 |
| … they are boring | .84 |
| … insufferable | .74 |
| Instrumental attitudes (construct reliability = .86, AVE = .60) |                             |
| … they are wise | .77 |
| … they are correct | .84 |
| … they are beneficial | .74 |
| … they are important | .75 |
| Subjective norms: Regarding staying at home during the lockdown/quarantine (construct reliability = .90, AVE = .87) |                             |
| My family expects me to do so | .82 |
| My neighbours expect me to do so | .90 |
| My local community expects me to do so | .89 |
| Policy support (construct reliability = .73, AVE = .48) |                             |

Note. N = 528. Satorra-Bentler $\chi^2$ $^{(209, N = 528)} = 318.8$, $p < .001$, RMSEA $= .032$, 90% CI of RMSEA [.024 – .038], and comparative fit index $= .99$, standardized root mean square residue $= .045$.

Abbreviations: AVE, average variance extracted; CI, confidence interval; RMSEA, root mean square error of approximation.

Experiential and instrumental attitudes were measured by seven items selected and adapted from the literature (e.g., Fishbein & Ajzen, 2010). Participants responded to these questions: “Regarding the lockdown (or close management) where you lived, it was boring/insufferable/inconvenient/wise/correct/beneficial/important.” Responses ranged from 1 (strongly disagree) to 7 (strongly agree). The first three items are loaded on one factor (i.e., experiential attitudes); the last four items are loaded on another factor (i.e., instrumental attitudes). Alpha coefficients were .79 and .80, respectively.

Subjective norms were measured by three items adapted from Fishbein and Ajzen (2010): “Regarding staying at home during the lockdown/quarantine, my family expected me to do so/my neighbours expected me to do so/my community expected me to do so.” Alpha coefficient was .87.

Policy support was measured by three items: “I supported the close management policy in my community,” “I supported a lockdown policy in the areas that were affected by the novel coronavirus,” and “I was willing to try my best to contain the novel coronavirus.” Alpha coefficient was .65.

Risk susceptibility was measured by asking the participants to estimate the likelihood of contracting the novel coronavirus during the lockdown/close management period, with wording similar to that used in the definitions in Rosenstock (1974): “During the lockdown (or close management) period, the likelihood of me getting the novel coronavirus would be high if I had gone out of my community,” “the likelihood of my family getting the novel coronavirus would be high if my family had gone out of my community,” and “the likelihood of my neighbors getting the novel coronavirus would be high if
they had gone out of the community.” Alpha coefficient was .93.

Risk severity was measured by asking the participants to estimate the consequences of contracting the novel coronavirus during the lockdown/close management period: “If I/my family/my neighbors had gotten the novel coronavirus, the consequence would be serious.” Alpha coefficient was .86.

Participants were asked to state where they lived during the period of lockdown or close management and how long it lasted. Participants were also asked to estimate the number of people they knew who were infected by the novel coronavirus. Additional questions related to their demographics were included at the end of the questionnaire.

Results

Means, standard deviations and Pearson correlations are provided in Table 2. The present analysis relied mainly on hierarchical multiple regression.

For H1 (Table 3), instrumental attitudes (B = 0.29, p < .001) and norms (B = 0.04, p = .016), but not experiential attitudes (B = −0.02, p = .135), predicted support for a lockdown or close management policy. Demographic variables and residential status (Hubei vs. not) did not predict policy support.

To test the interaction effects and H2 and H3, I ran three separate hierarchical multiple regressions: The two attitude models included the demographic variables, the communitarian worldview, susceptibility and severity, and the interaction terms. For the policy support model, attitudes and norms were also entered. Variables forming the interaction terms were mean centred (i.e., susceptibility, severity, and communitarian worldviews).

For H2, none of the interaction terms between susceptibility and the communitarian worldview were significant. Susceptibility did not predict experiential attitudes, instrumental attitudes or policy support.

For H3(a), for experiential attitudes, the interaction effect was not significant (B = −0.15, p = .079). Communitarian worldviews were negatively associated with experiential attitudes (B = −0.25, p = .022), showing that those who had stronger communitarian worldviews were less likely to have experiential attitudes associated with “boring,” “insufferable” or “inconvenient.”

For instrumental attitudes, there was an interaction effect between severity and communitarian worldviews (B = −0.15, p < .001). Figure 3 shows the interaction effect between the two variables. The relationship between communitarian worldviews and instrumental attitudes was 0.40 (p < .001; 95% CI 0.27–0.51) when plotted at severity = 1SD above the mean and 0.72 (p < .001; 95% CI 0.64–0.81) when plotted at severity = 1SD below the mean. This means that the relationship between communitarian worldviews and instrumental attitudes was stronger when participants perceived low severity than when they perceived high severity. When interpreting from a different angle, those with a high communitarian worldview would form high instrumental attitudes regardless of perceived severity (B = 0.03, p = .336; 95% CI −0.10–0.03), whereas those with low communitarian worldviews would form higher instrumental attitudes when they perceived higher severity than when they perceived lower severity (B = 0.17, p < .001; 95% CI 0.11–0.24).

The interaction effect between severity and communitarian worldviews on policy support was significant (B = −.06, p = .015). Figure 4 shows the plots. At low perceived severity (1SD below), the regression coefficient was 0.44 (p < .001; 95% CI 0.35–0.52). At high perceived severity (1SD above), it was 0.32 (p < .001; 95% CI 0.21–0.43) when it was plotted at low severity (1SD below). Again, when interpreted from a different angle, those with a high communitarian worldview (1SD above) would form high policy support regardless of perceived severity (B = −0.01, p = .702; 95% CI −0.03–0.01), whereas those with low communitarian worldviews would form higher instrumental attitudes when they perceived higher severity than when they perceived lower severity (B = 0.08, p = .003; 95% CI 0.03–0.13).

Regarding effect sizes, the effects of communitarian worldviews on instrumental attitudes and policy support were strong at different levels of severity. However, there existed only a weak relationship between perceived severity at 1SD below the mean of communitarianism.

Discussion

Results from the analysis showed that, first, instrumental attitudes were a fairly strong predictor of public support for the lockdown policy, whereas experiential attitudes were not a predictor. Second, communitarian worldviews interacted with perceived severity in predicting instrumental attitudes and policy support. The present research provides both theoretical and practical implications as related to the reasoned action theoretical framework and the prevention of an infectious disease (i.e., support of a lockdown policy).

The present research also provides a more nuanced understanding of the role of attitudes on policy support. A drastic lockdown measure can bring about both instrumental benefits to contain a disease and living-related, experiential issues for those under a lockdown policy. It is intuitive to assume that participants’ support for a lockdown measure is based on how the participants balance the good and the bad. The present results showed
### TABLE 2
Means, Standard Deviations, and Pearson Correlations of the Variables Used in the Analysis

| Variable                                      | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  |
|-----------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1. Sex (1 = female, 2 = male)                | –   | –   | –   | –   | –   | –   | –   | –   | –   | –   | –   | –   | –   | –   |
| 2. Age                                        | .11*| –   | –   | –   | –   | –   | –   | –   | –   | –   | –   | –   | –   | –   |
| 3. Income                                     | .10*| .41**| –   | –   | –   | –   | –   | –   | –   | –   | –   | –   | –   | –   |
| 4. Education (years)                          | .05 | .07 | .28**| –   | –   | –   | –   | –   | –   | –   | –   | –   | –   | –   |
| 5. Hubei (1 = yes, 0 = no)                    | –.12**| –.07| –.15**| –.02| –   | –   | –   | –   | –   | –   | –   | –   | –   | –   |
| 6. Communitarian worldview                    | –.06| .11*| .08 | .10*| .03 | –   | –   | –   | –   | –   | –   | –   | –   | –   |
| 7. Perceived susceptibility                   | .03 | .05 | .12**| .08| .07 | .04 | –   | –   | –   | –   | –   | –   | –   | –   |
| 8. Perceived severity                         | –.03| .01 | .06 | .01 | –.03| .27**| .32**| –   | –   | –   | –   | –   | –   | –   |
| 9. Susceptibility × communitarian worldview   | .04 | –.02| .03 | –.01| –.01| .03 | .18**| .04 | –   | –   | –   | –   | –   | –   |
| 10. Severity × communitarian worldview        | .07 | –.02| –.03| –.08| –.11*| –.37**| .03 | –.20**| .18**| –   | –   | –   | –   | –   |
| 11. Subjective norms                          | –.01| .06 | .03 | –.04| .99*| .40**| .17**| .19**| .06 | –.14**| –   | –   | –   | –   |
| 12. Experiential attitudes                    | .02 | –.09*| –.05| –.03| –.06| –.08| .04 | .01 | .03 | –.05 | –.02 | –   | –   | –   |
| 13. Instrumental attitudes                    | –.09*| –.02| –.02| .02 | .04 | .59**| .08 | .27**| –.05| –.40**| .41**| –.11*| –   | –   |
| 14. Policy support                            | –.10*| .07 | .08 | .07 | .05 | .68**| .12**| .30**| .00 | –.39**| .41**| –.11*| .66**| –   |

**Mean**

| 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 29.66| 8.84| 15.16| 6.18| 4.03| 5.95| 5.91| 4.51| 6.41| 6.46| 1.22| 1.47| 0.74| 0.62|

**SD**

| 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 7.67| 6.55| 2.58| 0.67| 1.63| 1.08| 1.22| 1.47| 0.74| 0.62|    |    |    |    |

**Note.** N = 528.

Abbreviation: SD, standard deviation.

*p < .05.

**p < .01.
that instrumental attitudes were an important predictor and that experiential attitudes were not a predictor of policy support in China in early 2020. This pattern differs from Conner’s (2018) review of the efficacy of experiential and instrumental attitudes in predicting intentions. Conner (2018) found that experiential attitudes were a stronger predictor of intentions than were instrumental attitudes for most behaviours in the studies conducted in Western countries. There are three possible reasons. First, in general, instrumental attitudes focus on more distant outcomes, whereas experiential attitudes focus on the process of achieving the outcome and thus are more proximal. Research on time orientation has shown that future-oriented individuals are more likely to consider distal outcomes than proximal outcomes (e.g., Strathman et al., 1994). It is therefore possible that Chinese participants who are long-term oriented (vs. short-term oriented; Hofstede, 2001) are more likely to consider long-term goals in containing the virus at the sacrifice of present inconvenience and suffering. Second, this analysis is based on participants’ recall of their lockdown experience after it was lifted. It was possible that, during recall, participants focused on the outcome of disease containment instead of the previous experience. Third, and not to negate the second point, people, in general, can recall negative experiences accurately (Kensinger, 2007); it is simply possible that the experiential attitudes were not an important factor in the Chinese people’s support of a lockdown policy. Lastly, it should be acknowledged that experiential attitudes might not have been negative because the basic necessities were provided to those under lockdown, and entertainment options were available.

Recent theorizing on the reasoned action framework (Figure 1) states that many distal variables have linear relationships with the theory of reasoned action variables, but it does not specify the exact relationships among them. On the other hand, Lu et al. (2021) used secondary data analysis and found that collectivism (at the country level) predicted mask usage (at the country level). The present research examined the role of risk perceptions and communitarianism on attitudes and policy support by examining a more nuanced mechanism.

In particular, I found that the relationships between the distal variables and perceived severity on attitudes and policy support were interactive, not just linear, providing some support for the relationships specified in Figure 2. More specifically, perceived severity of contracting the virus moderated the relationship between communitarianism worldviews and instrumental attitudes and between communitarianism and policy support. There was no interaction effect between communitarianism and perceived susceptibility of contracting the virus.
showed the same interaction pattern for both instrumental attitudes and policy support. The relationships between communitarianism and instrumental attitudes were stronger at the lower level of perceived severity (1SD below) than at the higher level of perceived severity (1SD above). To interpret this interaction another way, the difference between the communitarians and individualists was bigger when perceived severity was low than when it was high. At a higher level of perceived severity, although I still observed that communitarians were more likely than individualists to have favourable instrumental attitudes and policy support, the difference was smaller than in the lower level of perceived severity. To interpret the interaction from yet another perspective, I observed that individualists (those on the left side of the regression lines) showed more favourable attitudes towards and greater support for a lockdown policy when the severity was higher than when it was lower, whereas there was no difference for the communitarians (those on the right side of the regression lines). Results suggest that communitarians favoured a lockdown policy regardless of perceived severity of risks, whereas individualists adjusted their instrumental attitudes and policy support when perceived severity was high compared with when it was low.

Furthermore, the reasoned action theoretical framework considers communitarianism and perceived risks as distal variables, which directly predict attitudes and indirectly predict intentions or behaviours. The present investigation treats policy support as a variable that is similar to intention and provides some evidence that, after controlling for attitudes and norms, communitarianism and perceived severity directly predicted policy support. Fishbein and Ajzen (2010) stated that the direct effects of distal variables are the result of imperfect measurements. However, the health belief model (Rosenstock, 1974) places perceived susceptibility and severity, as parallel constructs to perceived benefits and self-efficacy, in predicting preventive behaviours or intentions. Previous conceptualizations of cultural values or worldviews stated that culture dictates the way people think and behave, indicating that cultural worldviews may have more effect than a distal variable. The present research adds that the effects of communitarianism on predicting policy support were strong. For this moderated mediation model, at a low level of severity (1SD below), the direct effects of communitarianism on policy support were 0.43 (p < .001), the indirect effects of communitarianism via instrumental attitudes on policy support were 0.22 (.001), and the total effect was 0.65 (p < .001). At a high level of severity (1SD above), the direct effects of communitarianism on policy support were 0.32 (p < .001), the indirect effects of communitarianism via instrumental attitudes on policy support were 0.12 (p = .001), and the total effect was 0.44 (p < .001). The results showed that the direct effects of communitarianism on policy support were stronger than the indirect effects. Overall, these results and previous conceptualizations of cultural worldviews indicate that the role of cultural worldviews and risk perceptions may act more than distal variables, and the reasoned action theoretical framework might need to be revised regarding the role of “distal” variables. That is, collectively, the present investigation has shown that the role of perceived risks and cultural worldviews can be more complicated and nuanced than previously specified in the reasoned action theoretical framework.

Third, some additional findings should be discussed. Although it is reasonable to assume that subjective norms can be an important variable in China, a traditionally high collectivist country (Hofstede, 2001), subjective norms were a very weak predictor of policy support based on the regression analysis (β = .08, p = .039). The bivariate relationship based on Pearson correlations showed that the relationship was strong (r = .41, p < .001). In general, our interpretation should be based on the regression analysis, which controls for the effects of other important variables on the dependent variable (Cohen et al., 2003). The data analysis (Table 3) controlled for the influence of instrumental attitudes and communitarianism, on which subjective norms can be based: The former (e.g., the desirable outcome of lockdowns) can be one reason why the participants were expected to perform such behaviours, whereas communitarianism, an innate variable, can be an antecedent for subjective norms. Thus, subjective norms were no longer a significant predictor. Further, this was not surprising given that previous meta-analyses have shown that subjective norms were the weakest predictor of intentions, among the reasoned action variables (e.g., Armitage & Conner, 2001).

The present research showcases that communitarian worldviews were only associated with perceived severity of the virus but not perceived susceptibility of contracting the virus (Table 2), indicating that the consequences of what happens are more important than the simple possibility of getting it. Given the potentially dire consequences of COVID-19, the participants might have been primed to the severity of the illness via the media, leading communitarianism to be more associated with perceived severity. In addition, the relationship between cultural worldviews and risk perceptions may vary by the type of risk. Risks associated with individual sexual behaviours can be considered an individual’s responsibility, whereas it is a collective responsibility to tackle an airborne disease. However, more research should further address the generalizability of communitarian worldviews in predicting risk perceptions and whether the behavioural type can be a moderator.
Finally, the survey oversampled participants in Hubei province, who accounted for 41% \( (n=217) \) of the whole sample. It is not surprising that those in Hubei perceived slightly higher subjective norms to follow the policy than elsewhere \( (r = .09, p = .038; \) Table 2). This was reasonable given that Wuhan was the initial epicentre and expectations (i.e., subjective norms) on residents to follow the lockdown policy could be higher. I then controlled for the influence of location (Hubei or not) when conducting the regression analysis. Other than those, I did not find significant differences on the major variables between those in Hubei and elsewhere based on independent-samples \( t \) tests, such as perceived severity and communitarianism. This project did not further measure the reasons that might account for the nonsignificant differences. However, it is safe to assume that COVID-19 does not discriminate, so severity should be the same for those living in Hubei and elsewhere after the nationwide lockdowns were enacted. Instrumental attitudes should also be the same because lockdowns and quarantines are considered an effective way to prevent further infections. Heavy media coverage in China could also have influenced and standardized people’s risk perceptions.\(^5\)

Regarding experiential attitudes, although people in Hubei and Wuhan endured a longer period of lockdown than the rest of the nation, the basic life necessities and various media and communication options were available, which could have contributed to similar attitudes.

**Limitations and future research directions**

Several limitations should be acknowledged. First, this survey was conducted shortly after the lockdown policy was lifted in Wuhan, the initial world epicentre. For many, the negative experience might still be vivid and accurately recalled (Kensinger, 2007), but recall may also be subject to inaccuracies and “memory loss.” If possible, research conducted during a pandemic or an outbreak can provide a more accurate account of the public’s attitudes. Second, the sample skewed toward the young and more educated and thus was not representative of the people in China, although the sample did show some diversity in several aspects (e.g., provinces and occupations). However, those without internet access or who are less fortunate might have different perspectives on the lockdown. Third, the present analysis used an online survey panel provided by wjx.cn. How the sample was recruited was not fully disclosed.

Fourth, it is also helpful to examine policy support in various other countries that enacted or did not enact any lockdown and social distancing measures. It would also be helpful to examine the actual behaviours in a country or region that enacts a semi-lockdown measure.
Cumulatively, such research can provide a cross-cultural comparison during the pandemic. Lastly, the longest lockdown in China was in Wuhan and lasted 76 days, whereas social distancing or lockdown measures in the United States and many European countries that experienced many waves of COVID-19 can last much longer. As such, COVID-19 fatigue and lack of hope can be factors that influence participants’ attitudes toward COVID-19. As stated, this research examined one type of policy support, one that was more drastic than other types of health policy support (e.g., mask wearing or COVID-19 vaccination). That is, additional research should consider other variables related to COVID-19, such as moral identity or egalitarianism.

**Practical implications**

In the context of the COVID-19 pandemic, participants in this research were supportive of such a drastic measure as a lockdown. There was no difference in support between those who might have endured more (inside Hubei) and or less (outside of Hubei). The support was mainly motivated by instrumental attitudes (to obtain a good outcome) and their communitarian worldviews. Although cultural worldviews are not open to change within a short period, knowing the target audience’s cultural worldviews will inform health and government officials of the feasibility of a similar policy for the particular population. This analysis has shown that those high in communitarianism would support lockdown policies regardless of the risk level. On the other hand, for those with a lower level of communitarianism (1 SD below the mean $\leq 5.5$ on a 7-point scale), their support of lockdown policies would be positively related to the severity of COVID-19. As such, it would be important to promote perceived severity among these individuals. Additional research should be conducted before a public health campaign. If results from this analysis are
confirmed in future formative research, some form of acknowledgment of risk information might be sufficient for those with the strongest level of communitarianism. Furthermore, because many health issues can be framed as both distal and proximal, it is possible for future health campaigns to prime the instrumental aspect of containing an outbreak and convey the idea of long-term health. Experiential attitudes overall were not an important predictor. However, it is uncertain whether the experience of lockdown would be more problematic for certain economic groups or if the lockdown lasts longer. Because experiential attitudes are more affect-based, they may be open to change (Conner, 2018), and providing financial and emotional support for some groups with certain economic statuses might help.

In a public health crisis, the government and health officials should address the public concerns and motivate them to perform behaviours that will be good for themselves and others. Many decisions are often complicated by many cultural and political reasons, in addition to people’s psychological traits and demographics. This research explains why instituting a lockdown to contain a highly contagious and deadly virus was feasible in China without any major reported protest. At the theoretical level, this research contributes to the reasoned action model by specifying an interaction effect between antecedents. Future research in cultural worldviews and risk perceptions should consider a more nuanced conceptualization of risks and an interaction effect between the two.

**Conflict of Interest**

The author declares no conflict of interest in conducting and reporting this research.

**Funding Statement**

This research did not receive funding from any organization.
Data Availability Statement

Data that support the findings of this research are available from the author upon reasonable request.

Research Materials Statement

Research materials for this research are available from the author upon reasonable request.

Pre-Registration Statement

This research was not pre-registered.

End notes

1 The present analysis did not include perceived behavioural control because lockdown or quarantine measures were strictly enforced and all affected residents were largely devoid of any volitional control.
2 Among those not living in Hubei, 51 were from Guangdong, 32 from Shanghai, 22 from Jiangsu, 18 from Shandong, 14 from Beijing, 14 from Chongqing, 14 from Shanxi, 13 from Liaoan, 13 from Hebei, 11 from Sichuan, 11 from Zhejiang, and 10 from Jiangxi. All other provinces and regions in mainland China, except for Qinghai, were represented, with one to nine participants from each. Although not a major aim, the present research oversampled participants from Hubei province to investigate whether the hardship associated with the more stringent lockdown and close management measures would influence participants’ attitudes and policy support. Analysis using t tests showed similar results on all the variables (except for subjective norms) between those in Hubei and those from elsewhere. There were no differences between the two groups on instrumental attitudes (M_Hubei = 6.44, SD = 0.77; M_elsewhere = 6.39, SD = 0.72, t (526) = 0.84, p = .404), experiential attitudes (M_Hubei = 4.62, SD = 0.143; M_elsewhere = 4.44, SD = 1.50, t (526) = 1.03, p = .155), or policy support (M_Hubei = 6.49, SD = 0.57; M_elsewhere = 6.43, SD = 0.65, t (526) = 0.302). It is particularly noteworthy that those living in Hubei did not have more negative experiential attitudes (e.g., boring or inconvenient) than those living elsewhere.
3 According to Hair et al. (2018), AVE “is a complementary measure to the construct reliability value,” and “guidelines suggest that the variance extracted value should exceed .50.” Two constructs in this research had an AVE of .47 or .48, but standardized factor loadings ranged from .62 to .74 and construct reliabilities were .77 and .73, which were acceptable.
4 One reviewer suggested the need to check potential common method bias. Common method bias is not a concern for moderation analysis (H2 and H3). For the correlational results (H1), the Harmon single factor approach using the principal axis factoring with one factor estimated the variance to be 24.4%, which was less than 50%. Thus, common method bias was not a concern for this research.
5 I thank the reviewer for this comment.
6 One reviewer mentioned that cultural tightness (how strict social norms are in a region) can be an important predictor of COVID-19 prevention. Lu et al. (2021) did not find that cultural tightness measured at the country level predicted the use of masks to prevent COVID-19. However, Lu et al. speculated that cultural tightness could be a significant predictor of enforcement-related policies. I added cultural tightness scores at the province level in China (Chua et al., 2019) to the dataset based on participants’ IP addresses. Additional Pearson correlation analysis showed that the relationship between cultural tightness and the Chinese people’s policy support was r = .004, p = .920. I encourage further conceptualization and measurement of this concept.

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